

ACCESSORIES & EQUIPMENT

Auto Access Seat System (Diagnostic Codes & Symptom Tests) - Sienna

AUTO ACCESS SEAT SYSTEM

DTC 11: RECLINING MOTOR MALFUNCTION

DESCRIPTION

When the power seat switch assembly (reclining switch) or No. 2 power seat switch assembly (reclining switch) have been operated, the position control ECU assembly outputs driving voltage to drive the rear seat with adjuster frame assembly LH (reclining motor).

DTC No.	DTC Detection Condition	Trouble Area
11	While the rear seat with adjuster frame assembly LH (reclining motor) is stopped, a pulse signal of 32 edges or more is detected within 0.5 seconds	• Rear seat with adjuster frame assembly LH (reclining motor) • Harness or connector • Position control ECU assembly

WIRING DIAGRAM

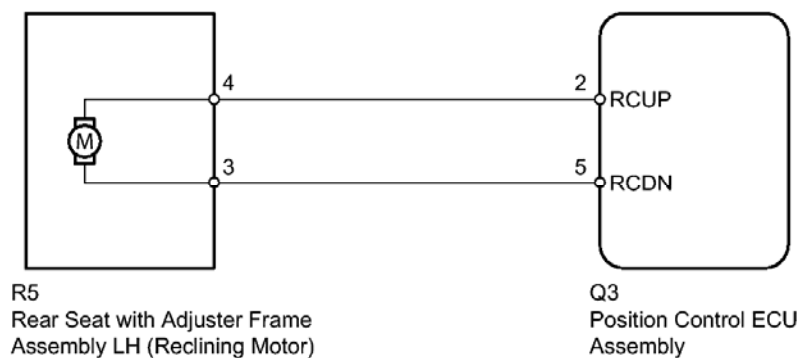


Fig. 1: Reclining Motor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent

operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.

- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.
- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

1. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)

- a. Disconnect the R5 rear seat with adjuster frame assembly LH (reclining motor) connector.

*a

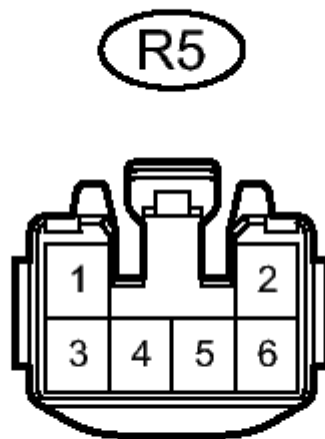


Fig. 2: Checking R5 LH (Reclining Motor)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
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R5-4 - Body ground	Power seat switch assembly (up switch) off --> on	Below 1 V --> 11 to 14 V
	No. 2 power seat switch assembly (up switch) off --> on	Below 1 V --> 11 to 14 V
R5-3 - Body ground	Power seat switch assembly (down switch) off --> on	Below 1 V --> 11 to 14 V
	No. 2 power seat switch assembly (down switch) off --> on	Below 1 V --> 11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Rear Seat with Adjuster Frame Assembly LH (Reclining Motor))
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- c. Reconnect the rear seat with adjuster frame assembly LH (reclining motor) connector.

NG --> See step 2

OK --> See step 3

2. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - RECLINING MOTOR)

- a. Disconnect the Q3 position control ECU assembly connector.
- b. Disconnect the R5 rear seat with adjuster frame assembly LH (reclining motor) connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q3-2 (RCUP) - R5-4	Always	Below 1 ohms
Q3-5 (RCDN) - R5-3	Always	Below 1 ohms
Q3-2 (RCUP) - Body ground	Always	10 kohms or higher
Q3-5 (RCDN) - Body ground	Always	10 kohms or higher

- d. Reconnect the rear seat with adjuster frame assembly LH (reclining motor) connector.
- e. Reconnect the position control ECU assembly connector.

NG --> **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK --> See step 4

3. **REPLACE REAR SEAT WITH ADJUSTER FRAME ASSEMBLY LH (RECLINING MOTOR). Refer to DISASSEMBLY**
4. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

DTC 12: FRONT-REAR SLIDE MOTOR MALFUNCTION

DESCRIPTION

When the power seat switch assembly (front-rear slide switch) or No. 2 power seat switch assembly (front-rear

slide switch) have been operated, the position control ECU assembly outputs driving voltage to drive the power seat motor assembly (front-rear slide motor).

DTC No.	DTC Detection Condition	Trouble Area
12	While the power seat motor assembly (front-rear slide motor) is stopped, a pulse signal of 32 edges or more is detected within 0.5 seconds	- Power seat motor assembly (front-rear slide motor) - Harness or connector - Position control ECU assembly

WIRING DIAGRAM

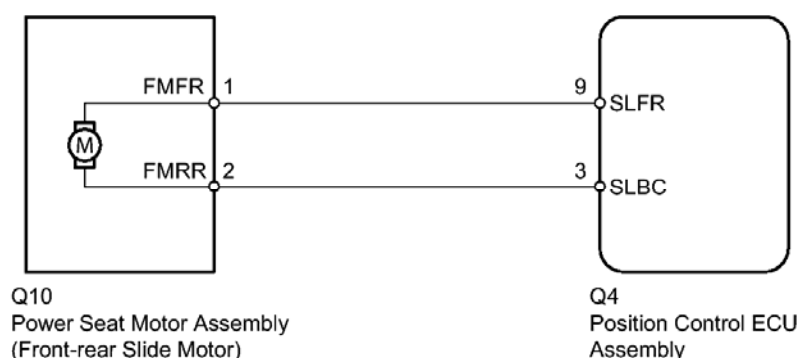


Fig. 3: Front-Rear Slide Motor Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.
- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

- 1. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)**
 - a. Disconnect the Q10 power seat motor assembly (front-rear slide motor) connector.

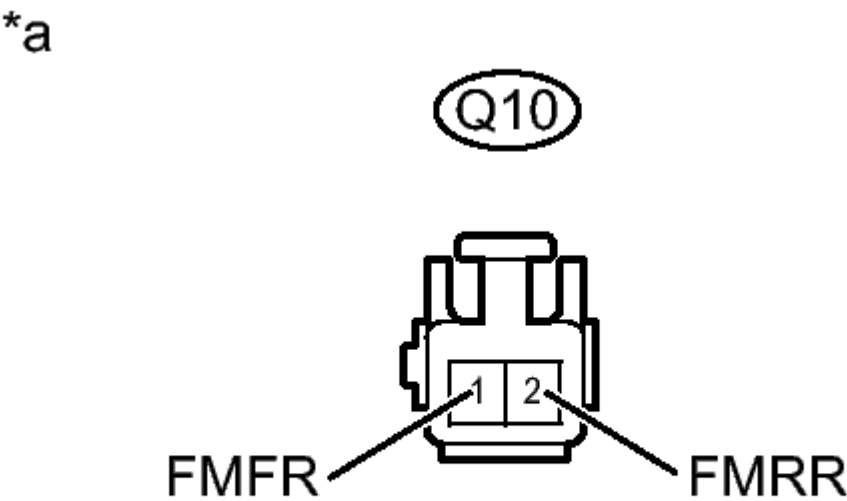


Fig. 4: Checking Q10 Power Seat Motor Assembly (Front-Rear Slide Motor)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Q10-1 (FMFR) - Body ground	Power seat switch assembly (front slide switch) off --> on	Below 1 V --> 11 to 14 V
	No. 2 power seat switch assembly	Below 1 V --> 11

	(front slide switch) off --> on	to 14 V
Q10-2 (FMRR) - Body ground	Power seat switch assembly (rear slide switch) off --> on	Below 1 V --> 11 to 14 V
	No. 2 power seat switch assembly (rear slide switch) off --> on	Below 1 V --> 11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Power Seat Motor Assembly (Front-rear Slide Motor))
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- c. Reconnect the power seat motor assembly (front-rear slide motor) connector.

NG --> See step 2

OK --> See step 3

2. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - FRONT-REAR SLIDE MOTOR)

- Disconnect the Q4 position control ECU assembly connector.
- Disconnect the Q10 power seat motor assembly (front-rear slide motor) connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q4-9 (SLFR) - Q10-1 (FMFR)	Always	Below 1 ohms
Q4-3 (SLBC) - Q10-2 (FMRR)	Always	Below 1 ohms
Q4-9 (SLFR) - Body ground	Always	10 kohms or higher
Q4-3 (SLBC) - Body ground	Always	10 kohms or higher

- d. Reconnect the power seat motor assembly (front-rear slide motor) connector.
- e. Reconnect the position control ECU assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 4

3. **REPLACE POWER SEAT MOTOR ASSEMBLY (FRONT-REAR SLIDE MOTOR). Refer to DISASSEMBLY**
4. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

DTC 13: SWIVEL MOTOR MALFUNCTION

DESCRIPTION

When the No. 2 power seat switch assembly (ingress and egress switch) has been operated, the position control ECU assembly outputs driving voltage to drive the power seat motor assembly (swivel motor).

DTC No.	DTC Detection Condition	Trouble Area
13	While the power seat motor assembly (swivel motor) is stopped, a pulse signal of 32 edges or more is detected within 0.5 seconds	• Power seat motor assembly (swivel motor) • Harness or connector • Position control ECU assembly

WIRING DIAGRAM

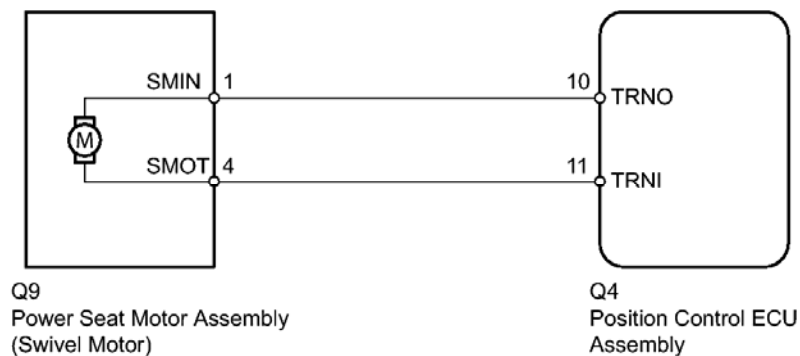


Fig. 5: Swivel Motor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.
- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)**
 - a. Disconnect the Q9 power seat motor assembly (swivel motor) connector.

*a

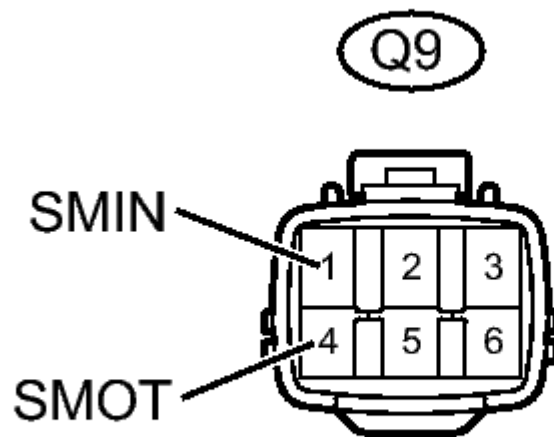


Fig. 6: Checking Q9 Power Seat Motor Assembly (Swivel Motor)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Q9-1 (SMIN) - Body ground	No. 2 power seat switch assembly (egress switch) off --> on	Below 1 V --> 11 to 14 V
Q9-4 (SMOT) - Body ground	No. 2 power seat switch assembly (ingress switch) off --> on	Below 1 V --> 11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Power Seat Motor Assembly (Swivel Motor))
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- c. Reconnect the power seat motor assembly (swivel motor) connector.

NG --> **See step 2**

OK --> **See step 3**

2. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - SWIVEL MOTOR)

- Disconnect the Q4 position control ECU assembly connector.
- Disconnect the Q9 power seat motor assembly (swivel motor) connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q4-10 (TRNO) - Q9-1 (SMIN)	Always	Below 1 ohms
Q4-11 (TRNI) - Q9-4 (SMOT)	Always	Below 1 ohms
Q4-10 (TRNO) - Body ground	Always	10 kohms or higher
Q4-11 (TRNI) - Body ground	Always	10 kohms or higher

- d. Reconnect the power seat motor assembly (swivel motor) connector.

e. Reconnect the position control ECU assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 4

3. REPLACE POWER SEAT MOTOR ASSEMBLY (SWIVEL MOTOR). Refer to DISASSEMBLY

4. REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY

DTC 14: OUTWARD SLIDE MOTOR MALFUNCTION

DESCRIPTION

When the No. 2 power seat switch assembly (ingress and egress switch) has been operated, the position control ECU assembly outputs driving voltage to drive the power seat motor assembly (outward slide motor).

DTC No.	DTC Detection Condition	Trouble Area
14	While the power seat motor assembly (outward slide motor) is stopped, a pulse signal of 32 edges or more is detected within 0.5 seconds.	• Power seat motor assembly (outward slide motor) • Harness or connector • Position control ECU assembly

WIRING DIAGRAM

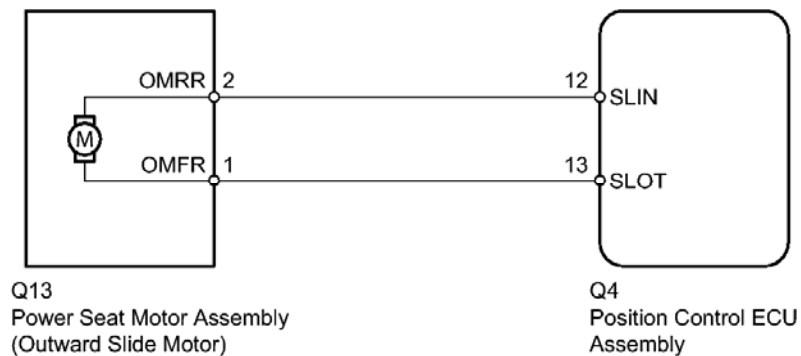


Fig. 7: Outward Slide Motor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.
- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)**
 - a. Disconnect the Q13 power seat motor assembly (outward slide motor) connector.

*a

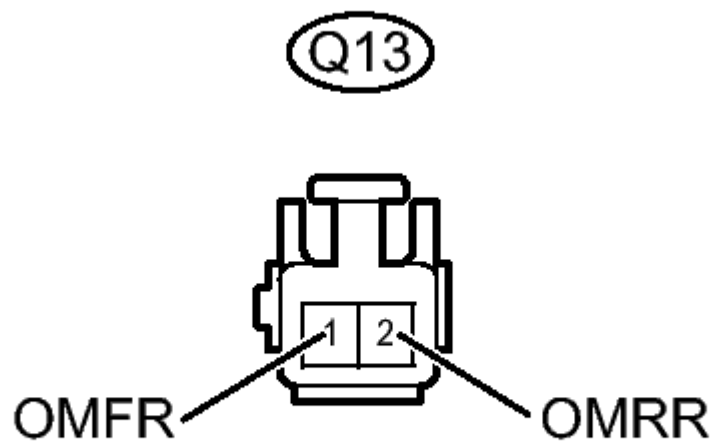


Fig. 8: Checking Q13 Power Seat Motor Assembly (Outward Slide Motor)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester	Switch	Specified
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Connection	Condition	Condition
Q13-1 (OMFR) - Body ground	No. 2 power seat switch assembly (egress switch) off --> on	Below 1 V --> 11 to 14 V
Q13-2 (OMRR) - Body ground	No. 2 power seat switch assembly (ingress switch) off --> on	Below 1 V --> 11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Power Seat Motor Assembly (Outward Slide Motor))
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- c. Reconnect the power seat motor assembly (outward slide motor) connector.

NG --> See step 2

OK --> See step 3

2. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - OUTWARD SLIDE MOTOR)

- Disconnect the Q4 position control ECU assembly connector.
- Disconnect the Q13 power seat motor assembly (outward slide motor) connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

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Tester Connection	Condition	Specified Condition
Q4-12 (SLIN) - Q13-2 (OMRR)	Always	Below 1 ohms
Q4-13 (SLOT) - Q13-1 (OMFR)	Always	Below 1 ohms
Q4-12 (SLIN) - Body ground	Always	10 kohms or higher
Q4-13 (SLOT) - Body ground	Always	10 kohms or higher

- d. Reconnect the power seat motor assembly (outward slide motor) connector.
- e. Reconnect the position control ECU assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 4

3. **REPLACE POWER SEAT MOTOR ASSEMBLY (OUTWARD SLIDE MOTOR). Refer to DISASSEMBLY**
4. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

DTC 15: UP-DOWN MOTOR MALFUNCTION

DESCRIPTION

When the No. 2 power seat switch assembly (ingress and egress switch) has been operated, the position control ECU assembly outputs driving voltage to drive the access seat cylinder assembly (up-down motor).

DTC No.	DTC Detection Condition	Trouble Area
15	While the access seat cylinder assembly (up-down motor) is stopped, a pulse signal of 32 edges or more is detected within 0.5 seconds	• A/A SEAT fuse • Power lift motor relay (raise relay) • Power lift motor relay (lower relay) • Access seat cylinder assembly (up-down motor) • Harness or connector

WIRING DIAGRAM

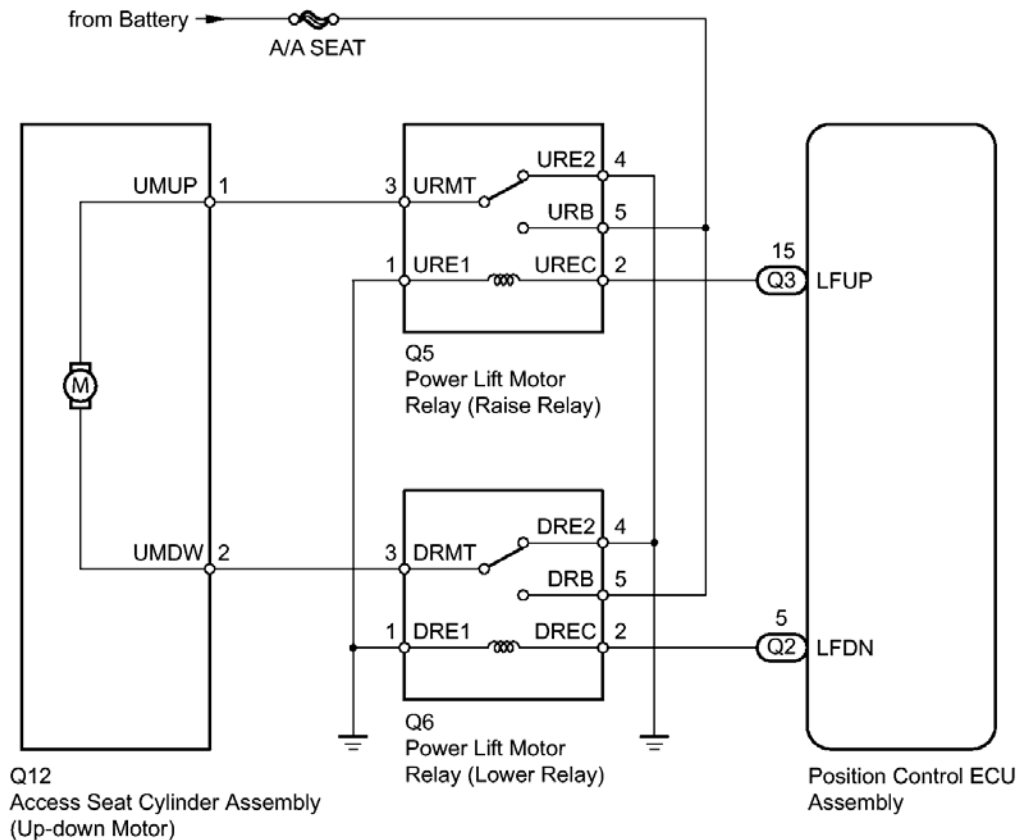


Fig. 9: Up-Down Motor Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is

still malfunctioning, perform the troubleshooting procedure.

- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .
- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)

- a. Disconnect the Q12 access seat cylinder assembly (up-down motor) connector.

*a

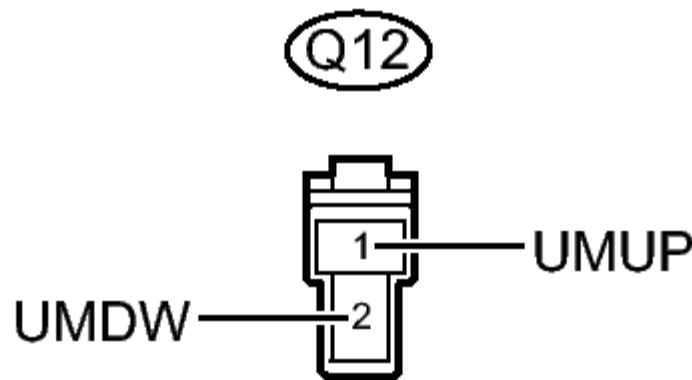


Fig. 10: Checking Q12 Access Seat Cylinder Assembly (Up-Down Motor)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Q12-1 (UMUP) -	No. 2 power seat switch	Below 1

Body ground	assembly (ingress switch) off --> on	V --> 11 to 14 V
Q12-2 (UMDW) - Body ground	No. 2 power seat switch assembly (egress switch) off --> on	Below 1 V --> 11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Access Seat Cylinder Assembly (Up-down Motor))
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- c. Reconnect the access seat cylinder assembly (up-down motor) connector.

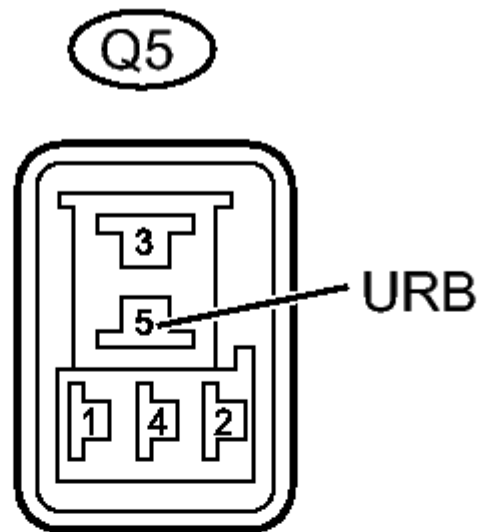
NG --> See step 2

OK --> See step 7

2. CHECK HARNESS AND CONNECTOR (BATTERY - POWER LIFT MOTOR RELAY (RAISE RELAY, LOWER RELAY))

- a. Disconnect the Q5 power lift motor relay (raise relay) connector.

*a



*b

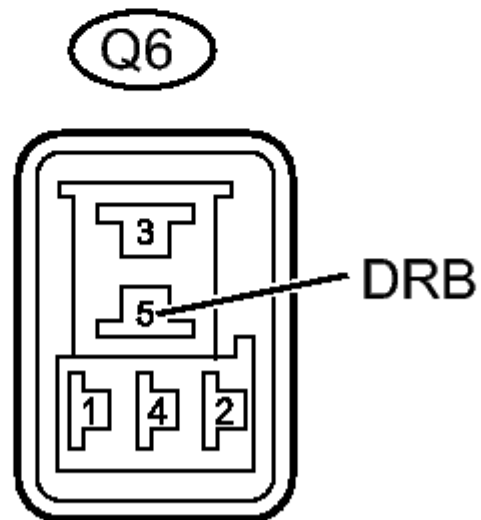


Fig. 11: Checking Q5 & Q6 Power Lift Motor Relay (Raise & Lower Relay)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Disconnect the Q6 power lift motor relay (lower relay) connector.
- c. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Condition	Specified Condition
Q5-5 (URB) - Body ground	Always	11 to 14 V
Q6-5 (DRB) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Power Lift Motor Relay (Raise Relay))
*b	Front view of wire harness connector (to Power Lift Motor Relay (Lower Relay))

- d. Reconnect the power lift motor relay (raise relay) connector.
- e. Reconnect the power lift motor relay (lower relay) connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

3. INSPECT POWER LIFT MOTOR RELAY (RAISE RELAY)

- a. Remove the power lift motor relay (raise relay). Refer to **DISASSEMBLY** .

*a

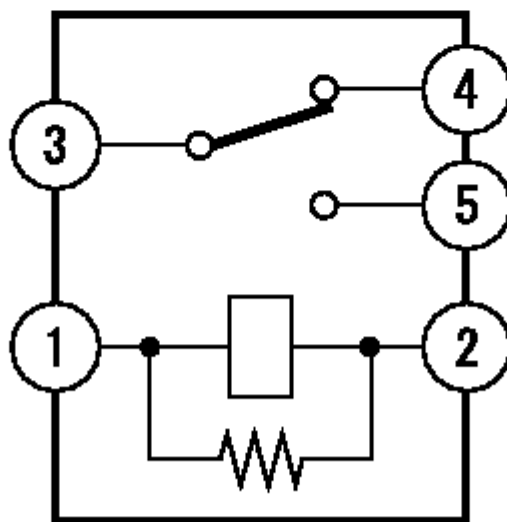
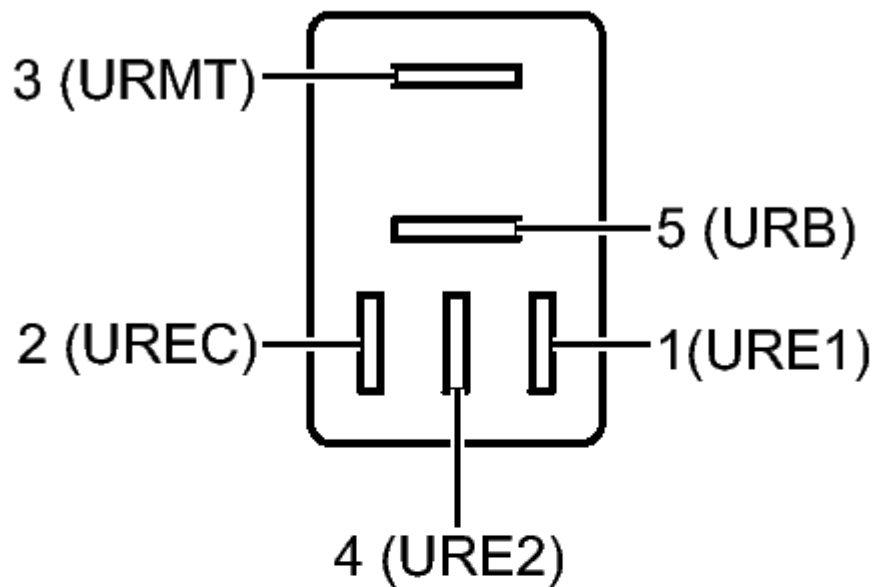


Fig. 12: Identifying Test Relay Terminals

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
3 (URMT) - 4 (URE2)	Battery voltage not applied	Below 1 ohms
	Battery voltage applied to terminals 1 (URE1) and 2 (UREC)	10 kohms or higher
3 (URMT) - 5 (URB)	Battery voltage not applied	10 kohms or higher
	Battery voltage applied to terminals 1 (URE1) and 2 (UREC)	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Power Lift Motor Relay (Raise Relay))
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- c. Reinstall the power lift motor relay (raise relay).

NG --> See step 8

OK: Go to next step

4. INSPECT POWER LIFT MOTOR RELAY (LOWER RELAY)

- a. Remove the power lift motor relay (lower relay). Refer to **DISASSEMBLY** .

*a

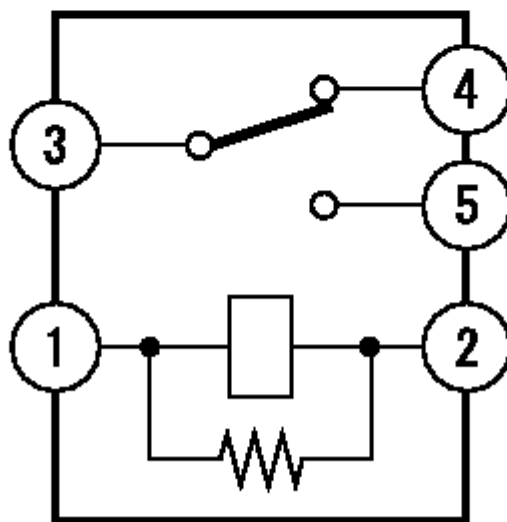
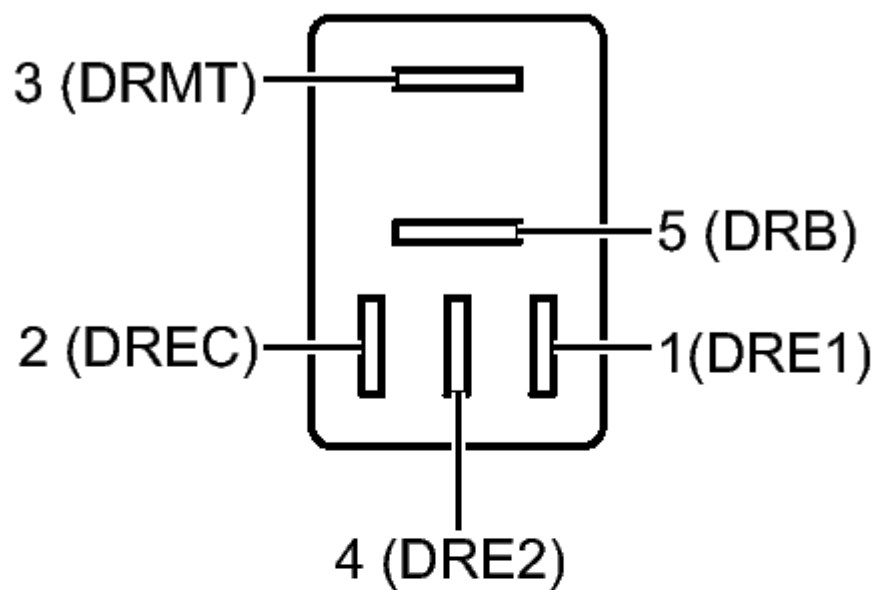


Fig. 13: Identifying Test Relay Terminals

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
3 (DRMT) - 4 (DRE2)	Battery voltage not applied	Below 1 ohms
	Battery voltage applied to terminals 1 (DRE1) and 2 (DREC)	10 kohms or higher
3 (DRMT) - 5 (DRB)	Battery voltage not applied	10 kohms or higher
	Battery voltage applied to terminals 1 (DRE1) and 2 (DREC)	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Power Lift Motor Relay (Lower Relay))
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- c. Reinstall the power lift motor relay (lower relay).

NG --> See step 9

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (RAISE RELAY - POSITION CONTROL ECU AND UP-DOWN MOTOR)**

- a. Disconnect the Q5 power lift motor relay (raise relay) connector.
- b. Disconnect the Q3 position control ECU assembly connector.
- c. Disconnect the Q12 access seat cylinder assembly (up-down motor) connector.
- d. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q5-2 (UREC) - Q3-15 (LFUP)	Always	Below 1 ohms
Q5-3 (URMT) - Q12-1 (UMUP)	Always	Below 1 ohms
Q5-1 (URE1) - Body ground	Always	Below 1 ohms
Q5-4 (URE2) - Body ground	Always	Below 1 ohms
Q3-15 (LFUP) - Body ground	Always	10 kohms or higher

- e. Reconnect the access seat cylinder assembly (up-down motor) connector.
- f. Reconnect the position control ECU assembly connector.
- g. Reconnect the power lift motor relay (raise relay) connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

6. CHECK HARNESS AND CONNECTOR (LOWER RELAY - POSITION CONTROL ECU AND UP-DOWN MOTOR)

- a. Disconnect the Q6 power lift motor relay (lower relay) connector.
- b. Disconnect the Q2 position control ECU assembly connector.
- c. Disconnect the Q12 access seat cylinder assembly (up-down motor) connector.
- d. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q6-2 (DREC) - Q2-5 (LFDN)	Always	Below 1 ohms
Q6-3 (DRMT) - Q12-2 (UMDW)	Always	Below 1 ohms
Q6-1 (DRE1) - Body ground	Always	Below 1 ohms
Q6-4 (DRE2) - Body ground	Always	Below 1 ohms
Q2-5 (LFDN) - Body ground	Always	10 kohms or higher

- e. Reconnect the access seat cylinder assembly (up-down motor) connector.
- f. Reconnect the position control ECU assembly connector.
- g. Reconnect the power lift motor relay (lower relay) connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 10

- 7. **REPLACE ACCESS SEAT CYLINDER ASSEMBLY (UP-DOWN MOTOR). Refer to DISASSEMBLY**
- 8. **REPLACE POWER LIFT MOTOR RELAY (RAISE RELAY). Refer to DISASSEMBLY**
- 9. **REPLACE POWER LIFT MOTOR RELAY (LOWER RELAY). Refer to DISASSEMBLY**
- 10. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

DTC 21: RECLINING PULSE ABNORMAL

DESCRIPTION

When the power seat switch assembly (reclining switch) or No. 2 power seat switch assembly (reclining switch) have been operated, the position control ECU assembly outputs driving voltage to drive the rear seat with

adjuster frame assembly LH (reclining motor). When the rear seat with adjuster frame assembly LH (reclining motor) is driven, its pulse sensor sends the seat position information via pulse signal to the position control ECU assembly. Based on this signal, the position control ECU assembly stores the seat reclining angular position.

DTC No.	DTC Detection Condition	Trouble Area
21	When the rear seat with adjuster frame assembly LH (reclining motor) is activated, 0.3 seconds pass without any edges in the pulse signal, and this occurs 7 times.	• Rear seat with adjuster frame assembly LH (reclining motor) • Harness or connector • Position control ECU assembly

WIRING DIAGRAM

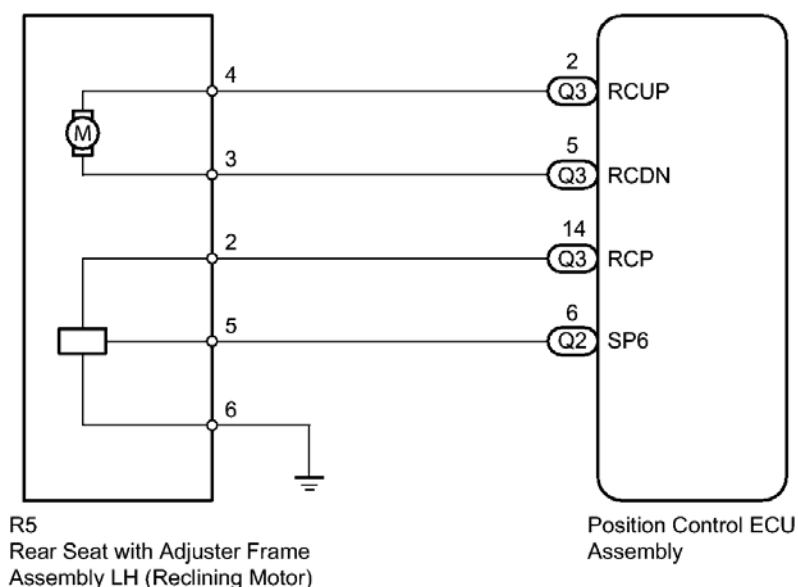


Fig. 14: Reclining Motor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the

troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.

- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

1. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)

- Disconnect the R5 rear seat with adjuster frame assembly LH (reclining motor) connector.

*a

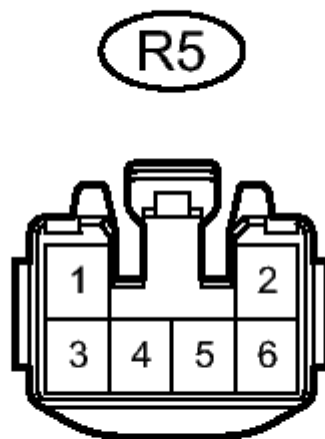


Fig. 15: Checking R5 LH (Reclining Motor)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
	Power seat switch assembly	Below 1 V --> 11

R5-4 - Body ground	(up switch) off --> on	to 14 V
	No. 2 power seat switch assembly (up switch) off --> on	Below 1 V --> 11 to 14 V
R5-3 - Body ground	Power seat switch assembly (down switch) off --> on	Below 1 V --> 11 to 14 V
	No. 2 power seat switch assembly (down switch) off --> on	Below 1 V --> 11 to 14 V
R5-5 - Body ground	Power seat switch assembly (up or down switch) on (During seat reclining operation)	5.5 to 6.5 V
	No. 2 power seat switch assembly (up or down switch) on (During seat	5.5 to 6.5 V

	reclining operation)	
--	-------------------------	--

TEXT IN ILLUSTRATION

	Front view of wire harness connector (to Rear *a Seat with Adjuster Frame Assembly LH (Reclining Motor))
--	--

- c. Reconnect the rear seat with adjuster frame assembly LH (reclining motor) connector.

NG --> See step 6

OK: Go to next step

2. INSPECT REAR SEAT WITH ADJUSTER FRAME ASSEMBLY LH (RECLINING MOTOR)

- a. Using an oscilloscope, check the waveform.

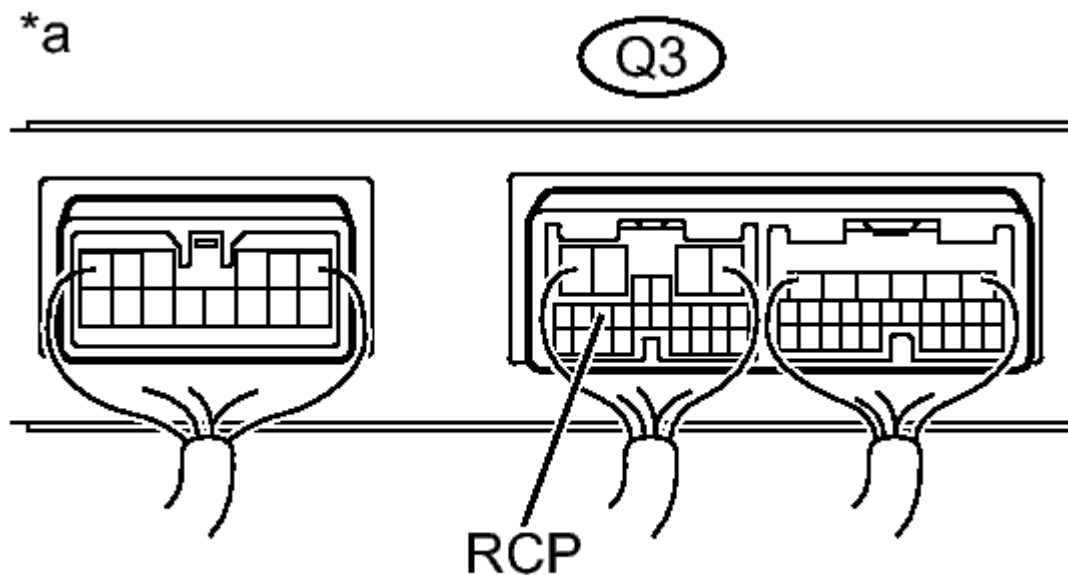


Fig. 16: Inspecting Rear Seat With Adjuster Frame Assembly LH (Reclining Motor)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

Tester Connection	Switch Condition	Specified Condition
Q3-14 (RCP)- Body ground	Power seat switch assembly (up or down switch) on (During seat reclining operation)	Pulse generation
	No. 2 power seat switch assembly (up or down switch) on (During seat reclining operation)	Pulse generation

TEXT IN ILLUSTRATION

*1	Component with harness connected (Position Control ECU Assembly)
----	--

NG --> See step 3

OK --> See step 7

3. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - RECLINING MOTOR)

- a. Disconnect the Q3 position control ECU assembly connector.
- b. Disconnect the R5 rear seat with adjuster frame assembly LH (reclining motor) connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q3-14 (RCP) - R5-2	Always	Below 1 ohms
R5-6 - Body ground	Always	Below 1 ohms
Q3-14 (RCP) - Body ground	Always	10 kohms or higher

- d. Reconnect the rear seat with adjuster frame assembly LH (reclining motor) connector.
- e. Reconnect the position control ECU assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

4. **REPLACE REAR SEAT WITH ADJUSTER FRAME ASSEMBLY LH (RECLINING MOTOR)**
 - a. Temporarily replace the rear seat with adjuster frame assembly (reclining motor) with a new or normally functioning one. Refer to **DISASSEMBLY** .

NEXT: Go to next step

5. **CHECK OPERATION**
 - a. Confirm that the auto access seat operates correctly. Refer to **OPERATION CHECK** .

OK

Auto access seat operates correctly.

NG --> See step 8

OK --> END

6. **CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - RECLINING MOTOR)**

- a. Disconnect the Q3 and Q2 position control ECU assembly connectors.
- b. Disconnect the R5 rear seat with adjuster frame assembly (reclining motor) connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q3-2 (RCUP) - R5-4	Always	Below 1 ohms
Q3-5 (RCDN) - R5-3	Always	Below 1 ohms
Q2-6 (SP6) - R5-5	Always	Below 1 ohms
Q3-2 (RCUP) - Body ground	Always	10 kohms or higher
Q3-5 (RCDN) - Body ground	Always	10 kohms or higher
Q2-6 (SP6) - Body ground	Always	10 kohms or higher

- d. Reconnect the rear seat with adjuster frame assembly (reclining motor) connector.
- e. Reconnect the position control ECU assembly connectors.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 9

7. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**
8. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**
9. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

DTC 22: FRONT-REAR SLIDE PULSE ABNORMAL

DESCRIPTION

When the power seat switch assembly (front-rear slide switch) or No. 2 power seat switch assembly (front-rear slide switch) have been operated, the position control ECU assembly outputs driving voltage to drive the power

seat motor assembly (front-rear slide motor). When the power seat motor assembly (front-rear slide motor) is driven, its pulse sensor sends the seat position information via pulse signal to the position control ECU assembly. Based on this signal, the position control ECU assembly stores the seat front-rear slide position.

DTC No.	DTC Detection Condition	Trouble Area
22	When the power seat motor assembly (front-rear slide motor) is activated, 0.3 seconds pass without any edges in the pulse signal, and this occurs 7 times	- Power seat motor assembly (front-rear slide motor) - Harness or connector - Position control ECU assembly

WIRING DIAGRAM

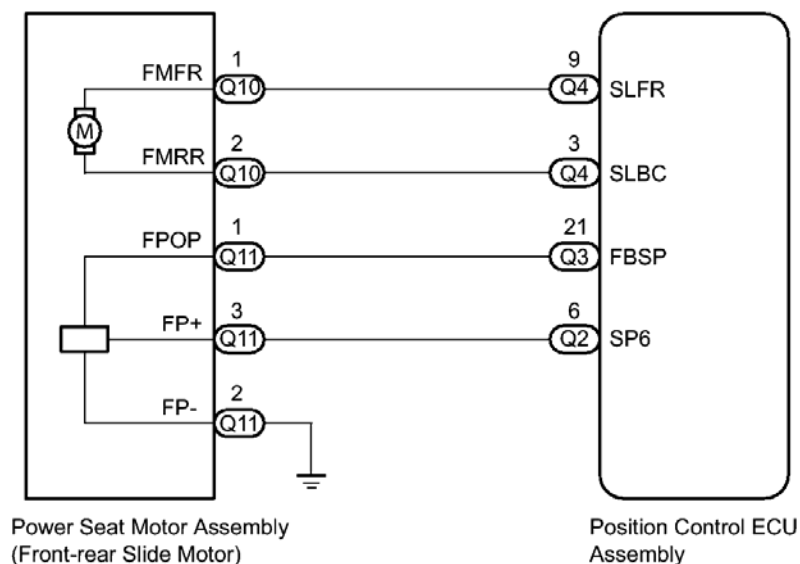


Fig. 17: Front-Rear Slide Motor Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is

still malfunctioning, perform the troubleshooting procedure.

- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

1. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)

- a. Disconnect the Q10 and Q11 power seat motor assembly (front-rear slide motor) connectors.

*a

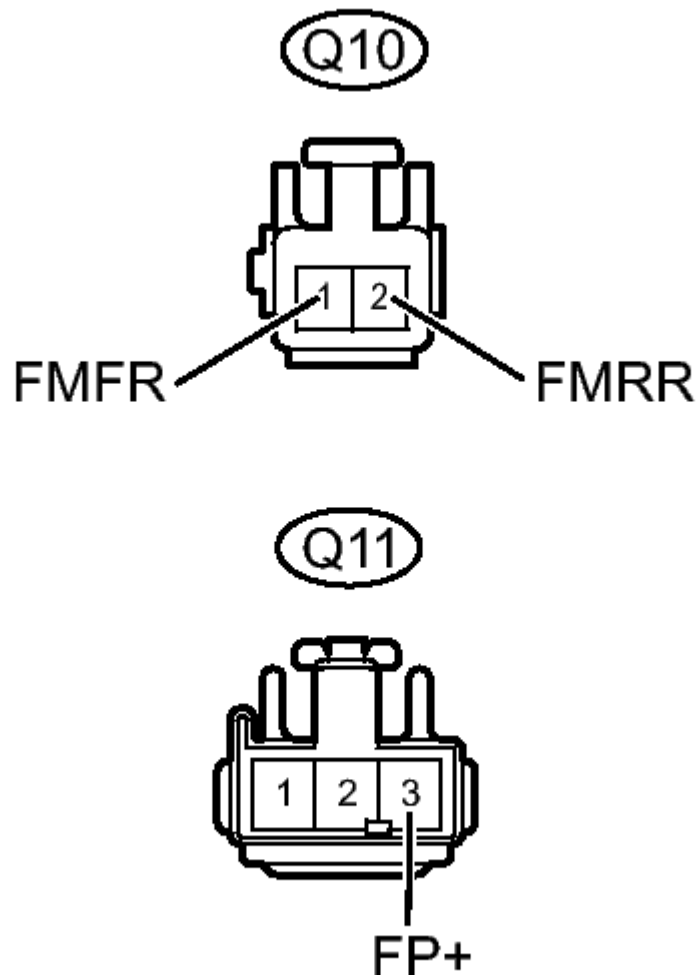


Fig. 18: Checking Q10 And Q11 Power Seat Motor Assembly (Front-Rear Slide Motor)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Q10-1 (FMFR) - Body ground	Power seat switch assembly (front slide switch) off --> on	Below 1 V --> 11 to 14 V
	No. 2 power seat switch assembly (front slide switch) off --> on	Below 1 V --> 11 to 14 V
Q10-2 (FMRR) - Body ground	Power seat switch assembly (rear slide switch) off --> on	Below 1 V --> 11 to 14 V
	No. 2 power seat switch assembly (rear slide switch) off --> on	Below 1 V --> 11 to 14 V
Q11-3	Power seat switch assembly (front or rear slide switch) on (During seat front-rear slide operation)	5.5 to 6.5 V

(FP+) - Body ground	No. 2 power seat switch assembly (front or rear slide switch) on (During seat front- rear slide operation)	5.5 to 6.5 V
---------------------------	---	-----------------

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Power Seat Motor Assembly (Front- rear Slide Motor))
----	--

- c. Reconnect the power seat motor assembly (front-rear slide motor) connectors.

NG --> See step 6

OK: Go to next step

2. CHECK POWER SEAT MOTOR ASSEMBLY (FRONT-REAR SLIDE MOTOR)

- a. Using an oscilloscope, check the waveform.

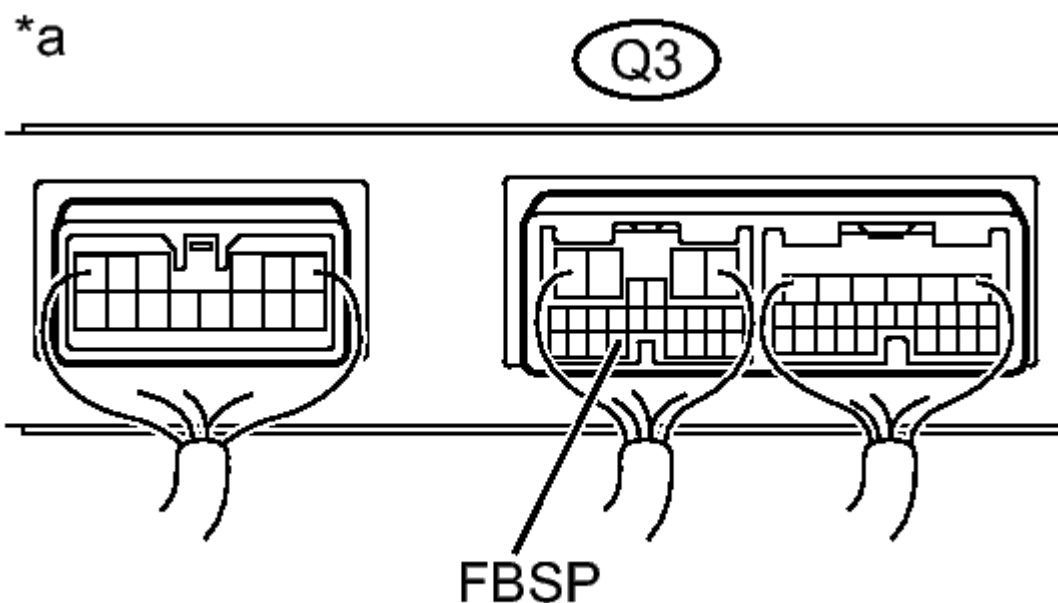


Fig. 19: Checking Power Seat Motor Assembly (Front-Rear Slide Motor)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

Tester Connection	Switch Condition	Specified Condition
Q3-21 (FBSP) - Body ground	Power seat switch assembly (front or rear slide switch) on (During seat front-rear slide operation)	Pulse generation
	No. 2 power seat switch assembly (front or rear slide switch) on (During	Pulse generation

	seat front-rear slide operation)	
--	----------------------------------	--

TEXT IN ILLUSTRATION

*a	Component with harness connected (Position Control ECU Assembly)
----	--

NG --> See step 3

OK --> See step 7

3. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - FRONT-REAR SLIDE MOTOR)

- Disconnect the Q3 position control ECU assembly connector.
- Disconnect the Q11 power seat motor assembly (front-rear slide motor) connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q3-21 (FBSP) - Q11-1 (FPOP)	Always	Below 1 ohms
Q11-2 (FP-) - Body ground	Always	Below 1 ohms
Q3-21 (FBSP) - Body ground	Always	10 kohms or higher

- Reconnect the power seat motor assembly (front-rear slide motor) connector.
- Reconnect the position control ECU assembly connector.

NG --> **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK: Go to next step

4. REPLACE POWER SEAT MOTOR ASSEMBLY (FRONT-REAR SLIDE MOTOR)

- a. Temporarily replace the power seat motor assembly (front-rear slide motor) with a new or normally functioning one. Refer to **DISASSEMBLY** .

NEXT: Go to next step

5. CHECK OPERATION

- a. Confirm that the auto access seat operates correctly. Refer to **OPERATION CHECK** .

OK

Auto access seat operates correctly.

NG --> See step 8

OK --> END

6. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - FRONT-REAR SLIDE MOTOR)

- a. Disconnect the Q4 and Q2 position control ECU assembly connectors.
- b. Disconnect the Q10 and Q11 power seat motor assembly (front-rear slide motor) connectors.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q4-9 (SLFR) - Q10-1 (FMFR)	Always	Below 1 ohms
Q4-3 (SLBC) - Q10-2 (FMRR)	Always	Below 1 ohms
Q2-6 (SP6) - Q11-3 (FP+)	Always	Below 1 ohms
Q4-9 (SLFR) - Body ground	Always	10 kohms or higher
Q4-3		

(SLBC) - Body ground	Always	10 kohms or higher
Q2-6 (SP6) - Body ground	Always	10 kohms or higher

- d. Reconnect the power seat motor assembly (front-rear slide motor) connectors.
- e. Reconnect the position control ECU assembly connectors.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 9

7. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**
8. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**
9. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

DTC 23: SWIVEL PULSE ABNORMAL

DESCRIPTION

When the No. 2 power seat switch assembly (ingress and egress switch) has been operated, the position control ECU assembly outputs driving voltage to drive the power seat motor assembly (swivel motor). When the power seat motor assembly (swivel motor) is driven, its pulse sensor sends the seat position information via pulse signal to the position control ECU assembly. Based on this signal, the position control ECU assembly stores the seat swivel position.

DTC No.	DTC Detection Condition	Trouble Area
23	When the power seat motor assembly (swivel motor) is activated, 0.3 seconds pass without any edges in the pulse signal, and this occurs 7 times	• Power seat motor assembly (swivel motor) • Harness or connector • Position control ECU assembly

WIRING DIAGRAM

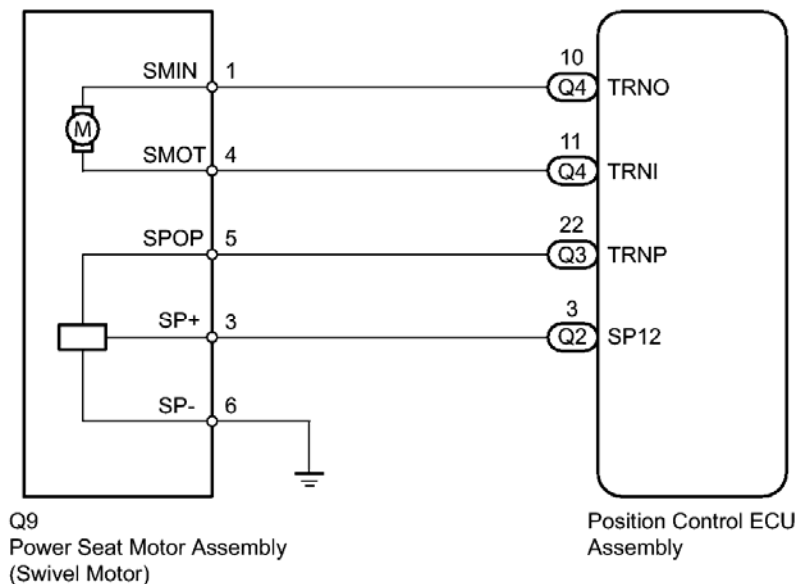


Fig. 20: Swivel Motor Circuit - Wiring Diagram

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.
- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)**
 - a. Disconnect the Q9 power seat motor assembly (swivel motor) connector.

*a

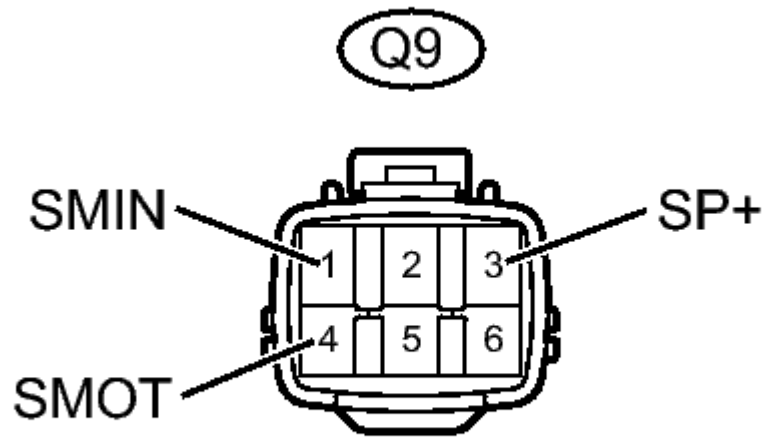


Fig. 21: Checking Q9 Power Seat Motor Assembly (Swivel Motor)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Q9-1 (SMIN) - Body ground	No. 2 power seat switch assembly (egress switch) off --> on	Below 1 V --> 11 to 14 V
Q9-4 (SMOT) - Body ground	No. 2 power seat switch assembly (ingress switch) off --> on	Below 1 V --> 11 to 14 V
	No. 2 power	

Q9-3 (SP+) - Body ground	seat switch assembly (ingress or egress switch) on (During seat swivel operation)	11 to 14 V
--------------------------------	--	------------

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Power Seat Motor Assembly (Swivel Motor))
----	--

- c. Reconnect the power seat motor assembly (swivel motor) connector.

NG --> See step 6

OK: Go to next step

2. CHECK POWER SEAT MOTOR ASSEMBLY (SWIVEL MOTOR)

- a. Using an oscilloscope, check the waveform.

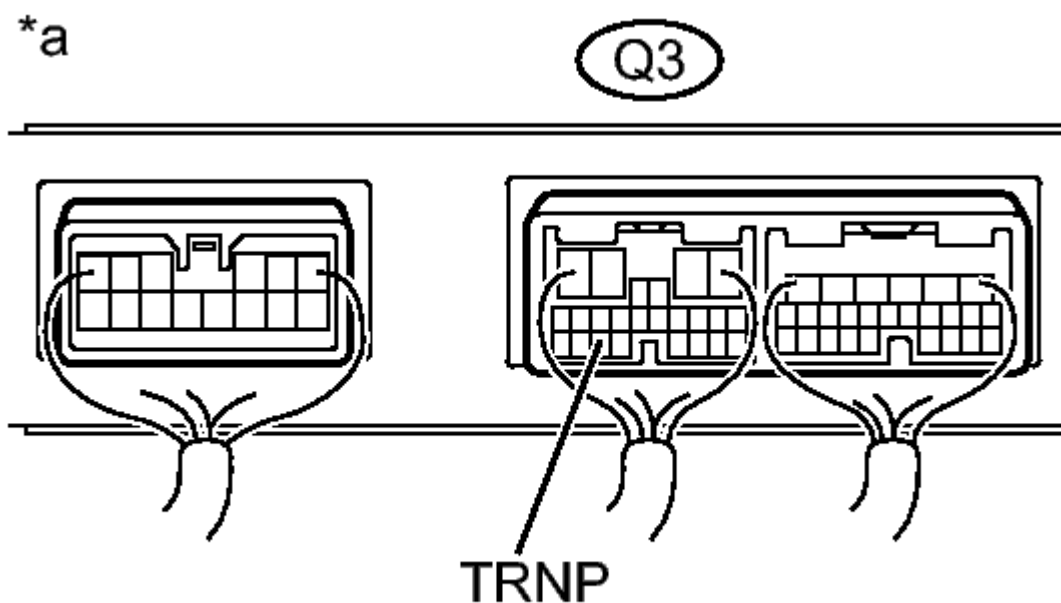


Fig. 22: Checking Power Seat Motor Assembly (Swivel Motor)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

Tester Connection	Switch Condition	Specified Condition
Q3-22 (TRNP) - Body ground	No. 2 power seat switch assembly (ingress or egress switch) on (During seat swivel operation)	Pulse generation

TEXT IN ILLUSTRATION

*a	Component with harness connected (Position Control)
----	---

ECU Assembly)

NG --> See step 3

OK --> See step 7

3. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - SWIVEL MOTOR)

- Disconnect the Q3 position control ECU assembly connector.
- Disconnect the Q9 power seat motor assembly (swivel motor) connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q3-22 (TRNP) - Q9-5 (SPOP)	Always	Below 1 ohms
Q9-6 (SP-) - Body ground	Always	Below 1 ohms
Q3-22 (TRNP) - Body ground	Always	10 kohms or higher

- Reconnect the power seat motor assembly (swivel motor) connector.
- Reconnect the position control ECU assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

4. REPLACE POWER SEAT MOTOR ASSEMBLY (SWIVEL MOTOR)

- Temporarily replace the power seat motor assembly (swivel motor) with a new or normally functioning one. Refer to DISASSEMBLY .

NEXT: Go to next step

5. CHECK OPERATION

- Confirm that the auto access seat operates correctly. Refer to OPERATION CHECK .

OK

Auto access seat operates correctly.

NG --> See step 8

OK --> END

6. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - SWIVEL MOTOR)

- a. Disconnect the Q4 and Q2 position control ECU assembly connectors.
- b. Disconnect the Q9 power seat motor assembly (swivel motor) connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q4-10 (TRNO) - Q9-1 (SMIN)	Always	Below 1 ohms
Q4-11 (TRNI) - Q9-4 (SMOT)	Always	Below 1 ohms
Q2-3 (SP12) - Q9-3 (SP+)	Always	Below 1 ohms
Q4-10 (TRNO) - Body ground	Always	10 kohms or higher
Q4-11 (TRNI) - Body ground	Always	10 kohms or higher
Q2-3 (SP12) - Body ground	Always	10 kohms or higher

- d. Reconnect the power seat motor assembly (swivel motor) connector.
- e. Reconnect the position control ECU assembly connectors.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 9

7. REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY
8. REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY
9. REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY

DTC 24: OUTWARD SLIDE PULSE ABNORMAL

DESCRIPTION

When the No. 2 power seat switch assembly (ingress and egress switch) has been operated, the position control ECU assembly outputs driving voltage to drive the power seat motor assembly (outward slide motor). When the power seat motor assembly (outward slide motor) is driven, its pulse sensor sends the seat position information via pulse signal to the position control ECU assembly. Based on this signal, the position control ECU assembly stores the seat outward slide position.

DTC No.	DTC Detection Condition	Trouble Area
24	When the power seat motor assembly (outward slide motor) is activated, 0.3 seconds pass without any edges in the pulse signal, and this occurs 7 times	• Power seat motor assembly (outward slide motor) • Harness or connector • Position control ECU assembly

WIRING DIAGRAM

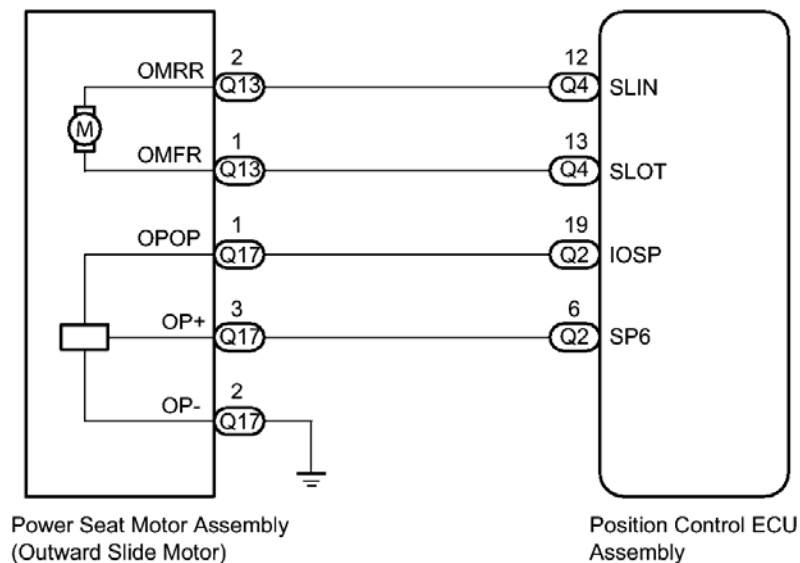


Fig. 23: Outward Slide Motor Circuit - Wiring Diagram

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.
- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)**
 - a. Disconnect the Q13 and Q17 power seat motor assembly (outward slide motor) connectors.

*a

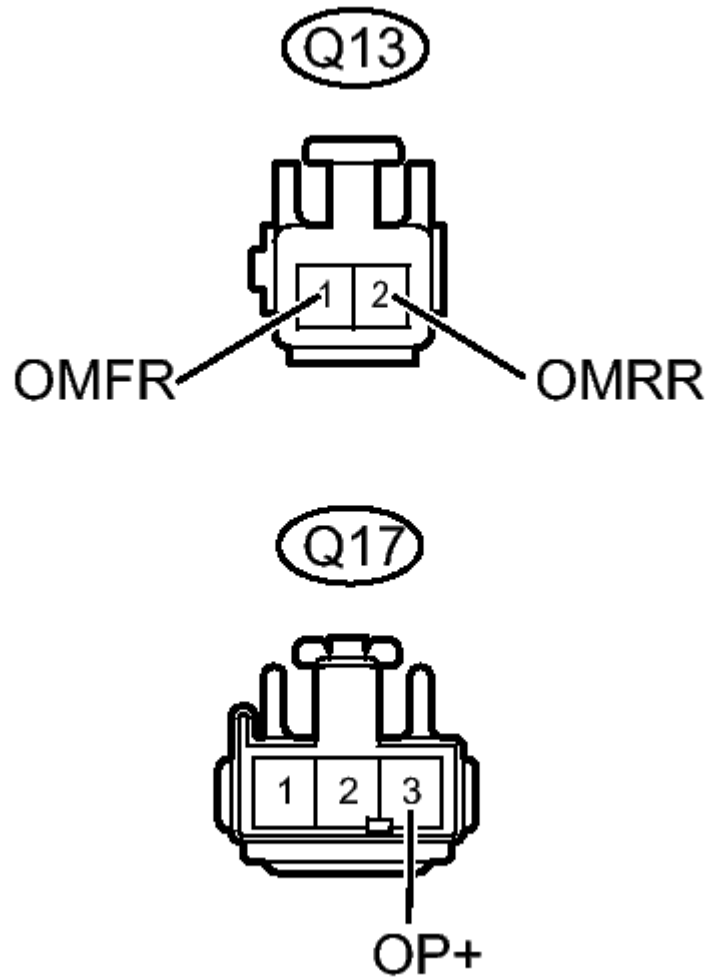


Fig. 24: Checking Q13 And Q17 Power Seat Motor Assembly (Outward Slide Motor)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Q13-1 (OMFR) - Body ground	No. 2 power seat switch assembly (egress switch) off --> on	Below 1 V --> 11 to 14 V
Q13-2	No. 2 power seat switch	

(OMRR) - Body ground	assembly (ingress switch) off --> on	Below 1 V --> 11 to 14 V
Q17-3 (OP+) - Body ground	No. 2 power seat switch assembly (ingress or egress switch) on (During seat inward/outward slide operation)	5.5 to 6.5 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Power Seat Motor Assembly (Outward Slide Motor))
----	--

- c. Reconnect the power seat motor assembly (outward slide motor) connectors.

NG --> See step 6

OK: Go to next step

2. CHECK POWER SEAT MOTOR ASSEMBLY (OUTWARD SLIDE MOTOR)

- a. Using an oscilloscope, check the waveform.

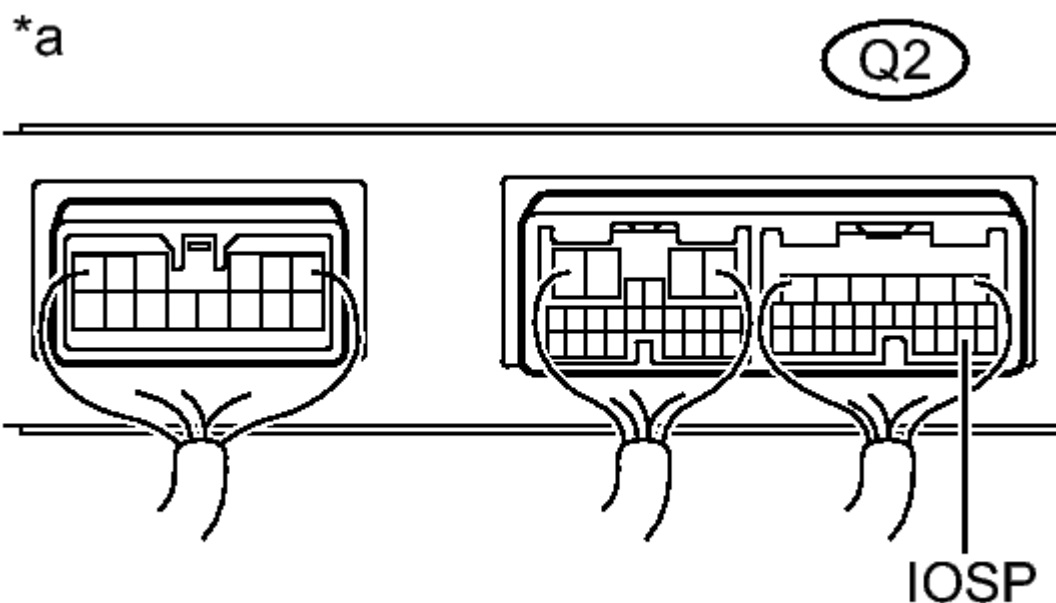


Fig. 25: Checking Power Seat Motor Assembly (Outward Slide Motor)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

Tester Connection	Switch Condition	Specified Condition
Q2-19 (IOSP) - Body ground	No. 2 power seat switch assembly (ingress or egress switch) on (During seat inward/outward slide operation)	Pulse generation

TEXT IN ILLUSTRATION

*a	Component with harness connected (Position Control ECU Assembly)
----	--

NG --> See step 3

OK --> See step 7

3. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - OUTWARD SLIDE MOTOR)

- a. Disconnect the Q2 position control ECU assembly connector.
- b. Disconnect the Q17 power seat motor assembly (outward slide motor) connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q2-19 (IOSP) - Q17-1 (OPOP)	Always	Below 1 ohms
Q17-2 (OP-) - Body ground	Always	Below 1 ohms
Q2-19 (IOSP) - Body ground	Always	10 kohms or higher

- d. Reconnect the power seat motor assembly (outward slide motor) connector.
- e. Reconnect the position control ECU assembly connector.

NG --> **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK: Go to next step

4. REPLACE POWER SEAT MOTOR ASSEMBLY (OUTWARD SLIDE MOTOR)

- a. Temporarily replace the power seat motor assembly (outward slide motor) with a new or normally functioning one. Refer to **DISASSEMBLY** .

NEXT: Go to next step

5. CHECK OPERATION

- a. Confirm that the auto access seat operates correctly. Refer to **OPERATION CHECK** .

OK

Auto access seat operates correctly.

NG --> See step 8

OK --> END

6. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - OUTWARD SLIDE MOTOR)

- a. Disconnect the Q4 and Q2 position control ECU assembly connectors.
- b. Disconnect the Q13 and Q17 power seat motor assembly (outward slide motor) connectors.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q4-12 (SLIN) - Q13-2 (OMRR)	Always	Below 1 ohms
Q4-13 (SLOT) - Q13-1 (OMFR)	Always	Below 1 ohms
Q2-6 (SP6) - Q17-3 (OP+)	Always	Below 1 ohms
Q4-12 (SLIN) - Body ground	Always	10 kohms or higher
Q4-13 (SLOT) - Body ground	Always	10 kohms or higher
Q2-6 (SP6) - Body ground	Always	10 kohms or higher

- d. Reconnect the power seat motor assembly (outward slide motor) connectors.
- e. Reconnect the position control ECU assembly connectors.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 9

7. REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY

8. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

9. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

DTC 25: UP-DOWN PULSE ABNORMAL

DESCRIPTION

When the No. 2 power seat switch assembly (ingress and egress switch) has been operated, the position control ECU assembly outputs driving voltage to drive the access seat cylinder assembly (up-down motor). When the access seat cylinder assembly (up-down motor) is driven, its pulse sensor sends the seat position information via pulse signal to the position control ECU assembly. Based on this signal, the position control ECU assembly stores the seat up-down position.

DTC No.	DTC Detection Condition	Trouble Area
25	When the access seat cylinder assembly (up-down motor) is activated, 0.3 seconds pass without any edges in the pulse signal, and this occurs 7 times	• A/A SEAT fuse • Power lift motor relay (raise relay) • Power lift motor relay (lower relay) • Access seat cylinder assembly (up-down motor) • Harness or connector • Position control ECU assembly

WIRING DIAGRAM

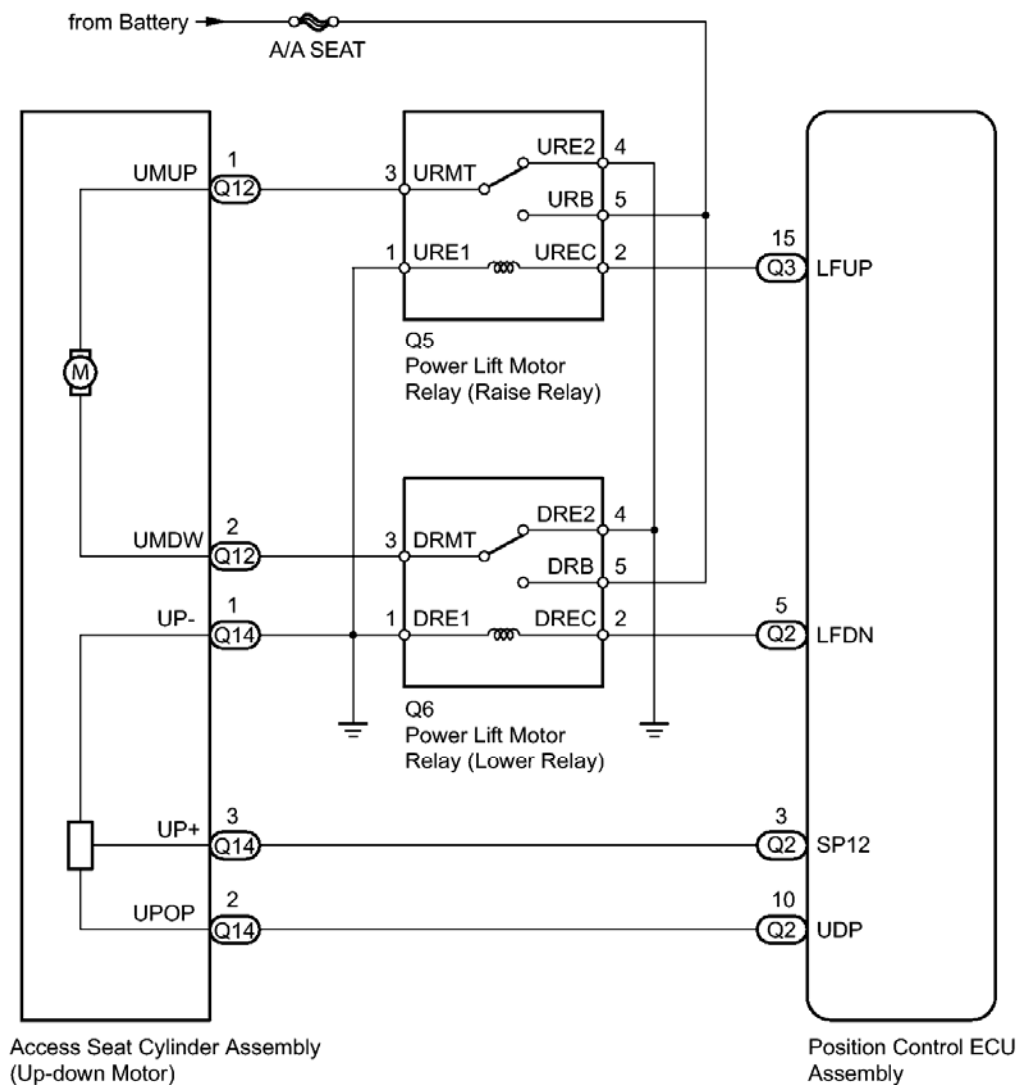


Fig. 26: Up-Down Motor Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is

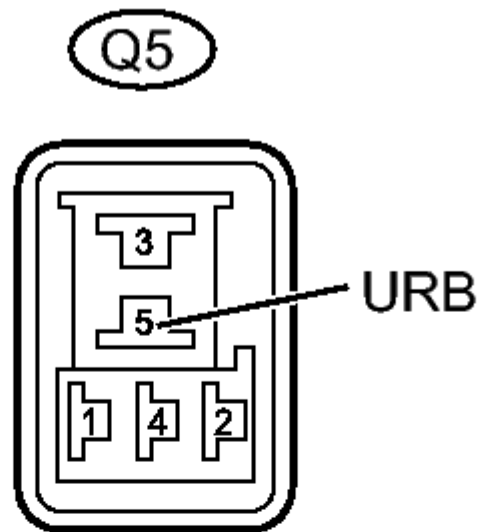
still malfunctioning, perform the troubleshooting procedure.

- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .
- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (BATTERY - POWER LIFT MOTOR RELAY (RAISE RELAY, LOWER RELAY))**
 - a. Disconnect the Q5 power lift motor relay (raise relay) connector.

*a



*b

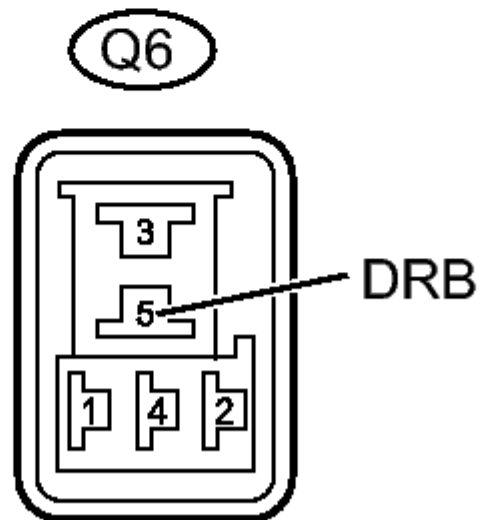


Fig. 27: Checking Q5 & Q6 Power Lift Motor Relay (Raise & Lower Relay)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Disconnect the Q6 power lift motor relay (lower relay) connector.
- c. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Condition	Specified Condition
Q5-5 (URB) - Body ground	Always	11 to 14 V
Q6-5 (DRB) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Power Lift Motor Relay (Raise Relay))
*b	Front view of wire harness connector (to Power Lift Motor Relay (Lower Relay))

- d. Reconnect the power lift motor relay (raise relay) connector.
- e. Reconnect the power lift motor relay (lower relay) connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

2. INSPECT POWER LIFT MOTOR RELAY (RAISE RELAY)

- a. Remove the power lift motor relay (raise relay). Refer to **DISASSEMBLY** .

*a

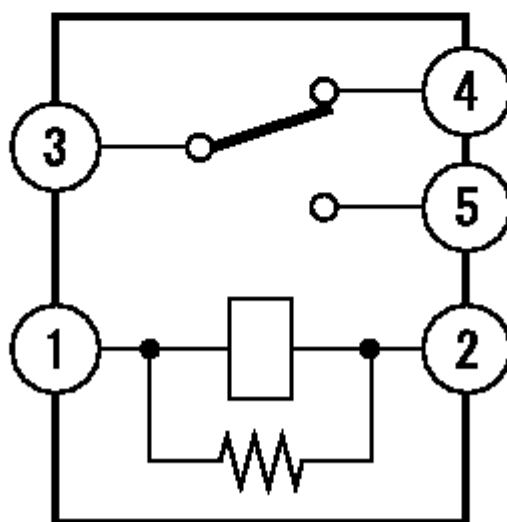
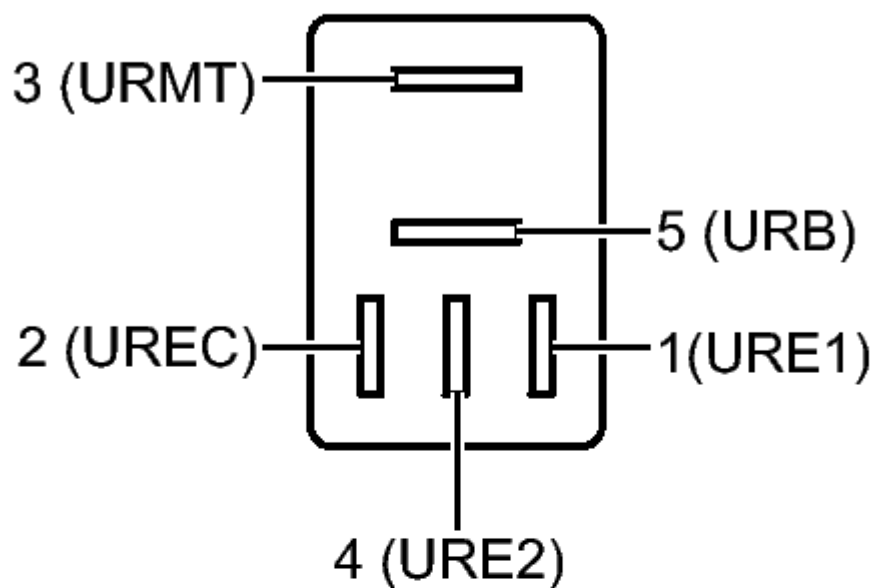


Fig. 28: Identifying Test Relay Terminals

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
3 (URMT) - 4 (URE2)	Battery voltage not applied	Below 1 ohms
	Battery voltage applied to terminals 1 (URE1) and 2 (UREC)	10 kohms or higher
3 (URMT) - 5 (URB)	Battery voltage not applied	10 kohms or higher
	Battery voltage applied to terminals 1 (URE1) and 2 (UREC)	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Power Lift Motor Relay (Raise Relay))
----	--

c. Reinstall the power lift motor relay (raise relay).

NG --> See step 10

OK: Go to next step

3. INSPECT POWER LIFT MOTOR RELAY (LOWER RELAY)

a. Remove the power lift motor relay (lower relay). Refer to **DISASSEMBLY** .

*a

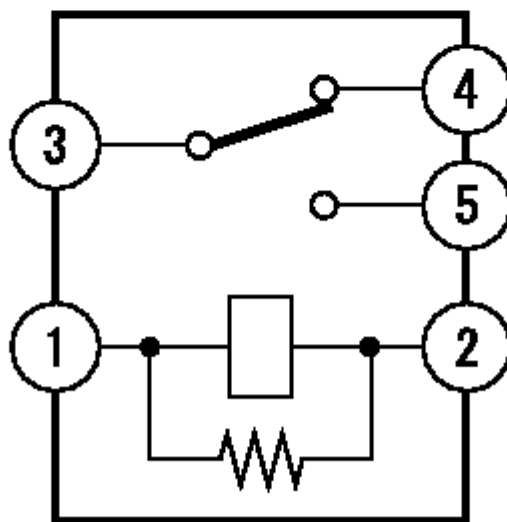
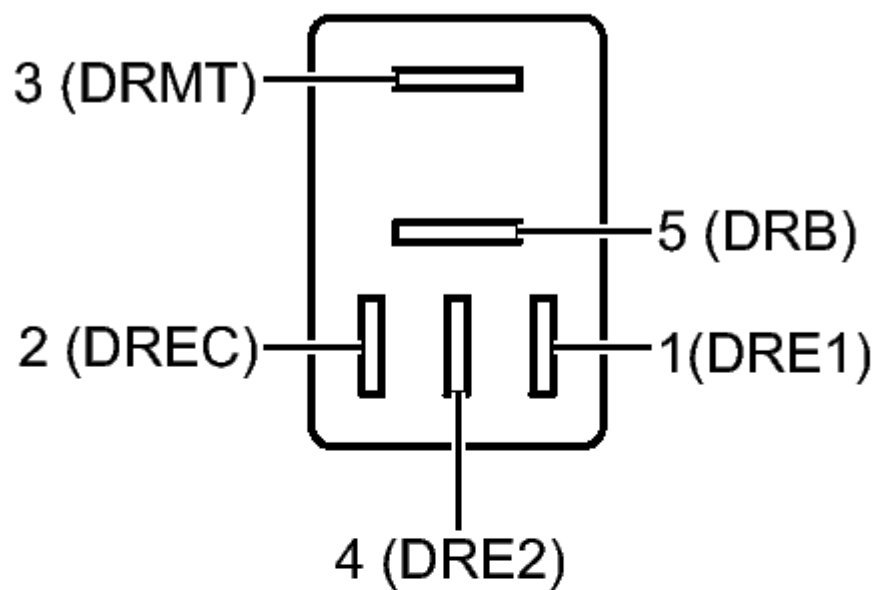


Fig. 29: Identifying Test Relay Terminals

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
3 (DRMT) - 4 (DRE2)	Battery voltage not applied	Below 1 ohms
	Battery voltage applied to terminals 1 (DRE1) and 2 (DREC)	10 kohms or higher
3 (DRMT) - 5 (DRB)	Battery voltage not applied	10 kohms or higher
	Battery voltage applied to terminals 1 (DRE1) and 2 (DREC)	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Power Lift Motor Relay (Lower Relay))
----	--

c. Reinstall the power lift motor relay (lower relay).

NG --> See step 11

OK: Go to next step

4. CHECK HARNESS AND CONNECTOR (RAISE RELAY - POSITION CONTROL ECU AND UP-DOWN MOTOR)

- a. Disconnect the Q5 power lift motor relay (raise relay) connector.
- b. Disconnect the Q3 position control ECU assembly connector.
- c. Disconnect the Q12 access seat cylinder assembly (up-down motor) connector.
- d. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q5-2 (UREC) - Q3-15 (LFUP)	Always	Below 1 ohms
Q5-3 (URMT) - Q12-1 (UMUP)	Always	Below 1 ohms
Q5-1 (URE1) - Body ground	Always	Below 1 ohms
Q5-4 (URE2) - Body ground	Always	Below 1 ohms
Q3-15 (LFUP) - Body ground	Always	10 kohms or higher

- e. Reconnect the access seat cylinder assembly (up-down motor) connector.
- f. Reconnect the position control ECU assembly connector.
- g. Reconnect the power lift motor relay (raise relay) connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. CHECK HARNESS AND CONNECTOR (LOWER RELAY - POSITION CONTROL ECU AND UP-DOWN MOTOR)

- a. Disconnect the Q6 power lift motor relay (lower relay) connector.
- b. Disconnect the Q2 position control ECU assembly connector.
- c. Disconnect the Q12 access seat cylinder assembly (up-down motor) connector.
- d. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q6-2 (DREC) - Q2-5 (LFDN)	Always	Below 1 ohms
Q6-3 (DRMT) - Q12-2 (UMDW)	Always	Below 1 ohms
Q6-1 (DRE1) - Body ground	Always	Below 1 ohms
Q6-4 (DRE2) - Body ground	Always	Below 1 ohms
Q2-5 (LFDN) - Body ground	Always	10 kohms or higher

- e. Reconnect the access seat cylinder assembly (up-down motor) connector.
- f. Reconnect the position control ECU assembly connector.
- g. Reconnect the power lift motor relay (lower relay) connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

6. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - UP-DOWN MOTOR)

- a. Disconnect the Q2 position control ECU assembly connector.
- b. Disconnect the Q14 access seat cylinder assembly (up-down motor) connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q2-3 (SP12) -		Below 1

Q14-3 (UP+)	Always	ohms
Q2-10 (UDP) - Q14-2 (UPOP)	Always	Below 1 ohms
Q2-3 (SP12) - Body ground	Always	10 kohms or higher
Q2-10 (UDP) - Body ground	Always	10 kohms or higher
Q14-1 (UP-) - Body ground	Always	Below 1 ohms

- d. Reconnect the access seat cylinder assembly (up-down motor) connector.
- e. Reconnect the position control ECU assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

- 7. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)**
 - a. Disconnect the Q12 and Q14 access seat cylinder assembly (up-down motor) connectors.

*a

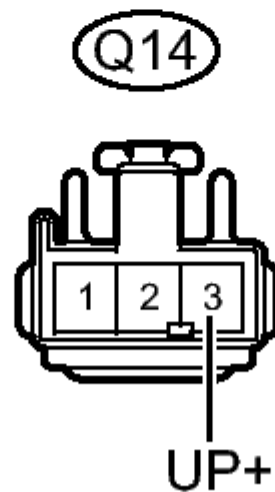
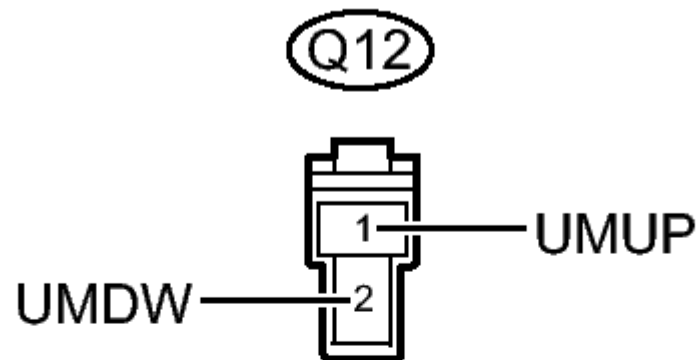


Fig. 30: Checking Q12 And Q14 Access Seat Cylinder Assembly (Up-Down Motor)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Q12-1 (UMUP) - Body ground	No. 2 power seat switch assembly (ingress switch)	Below 1 V --> 11 to 14 V

	off --> on	
Q12-2 (UMDW) - Body ground	No. 2 power seat switch assembly (egress switch) off --> on	Below 1 V --> 11 to 14 V
Q14-3 (UP+) - Body ground	No. 2 power seat switch assembly (ingress or egress switch) on (During seat up- down operation)	11 to 14 V

TEXT IN ILLUSTRATION

Front view of wire harness connector (to *a Access Seat Cylinder Assembly (Up- down Motor))

- c. Reconnect the access seat cylinder assembly (up-down motor) connectors.

NG --> See step 12

OK: Go to next step

8. REPLACE ACCESS SEAT CYLINDER ASSEMBLY (UP-DOWN MOTOR)

- a. Temporarily replace the access seat cylinder assembly (up-down motor) with a new or normally functioning one. Refer to **DISASSEMBLY** .

NEXT: Go to next step

9. CHECK OPERATION

- a. Confirm that the auto access seat operates correctly. Refer to **OPERATION CHECK** .

OK

Auto access seat operates correctly.

NG --> See step 13

OK --> END

10. REPLACE POWER LIFT MOTOR RELAY (RAISE RELAY). Refer to DISASSEMBLY

11. REPLACE POWER LIFT MOTOR RELAY (LOWER RELAY). Refer to DISASSEMBLY

12. REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY

13. REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY

DTC 31: PULSE OUT OF SYNC

DESCRIPTION

When the No. 2 power seat switch assembly (ingress and egress switch) has been operated, the position control ECU assembly outputs driving voltage to drive each motor. When a motor is driven, its pulse sensor sends the seat position information via pulse signal to the position control ECU assembly. Based on this signal, the position control ECU assembly stores the seat egress/ingress position.

DTC No.	DTC Detection Condition	Trouble Area
31	During access seat mode operation, the pulse information from synchronously-controlled motors is significantly out of sync	Position control ECU assembly

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When another DTC for the auto access seat system is also output, first conduct diagnosis for that DTC using the flowchart. Refer to **DIAGNOSTIC TROUBLE CODE CHART** .
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to **INITIALIZATION** and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.

- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

1. INITIALIZATION AUTO ACCESS SEAT SYSTEM

- Change to service operation mode and initialize the position information for the auto access seat. Refer to INITIALIZATION .

NEXT: Go to next step

2. CHECK OPERATION

- Operate the No. 2 power seat switch assembly (ingress and egress switch) so that the auto access seat is operated.

RESULT

Result	Proceed to
Operates Correctly	A
Does Not Operate Correctly	B

B --> See step 4

A: Go to next step

3. CHECK FOR DTC

- Check for DTCs and determine whether or not code 31 has been output. Refer to DIAGNOSIS SYSTEM .

RESULT

Result	Proceed to
DTC not output	A
DTC output	B

B --> See step 5

A --> END

4. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**
5. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

DTC 41: RECLINING ORIGIN POINT LIMIT SWITCH MALFUNCTION

DESCRIPTION

When the power seat switch assembly (reclining switch) or the No. 2 power seat switch assembly (reclining switch) has been operated, the position control ECU assembly outputs driving voltage to drive the rear seat with adjuster frame assembly LH (reclining motor). When the auto access seat reaches the reclining origin point position, the limit switch assembly (reclining origin point switch) operates to send the origin point position signal to the position control ECU assembly.

DTC No.	DTC Detection Condition	Trouble Area
41	During access seat mode or power seat mode operation, there is a malfunction in the limit switch assembly (reclining origin point switch).	• Limit switch assembly (reclining origin point switch) • Harness or connector • Position control ECU assembly

WIRING DIAGRAM

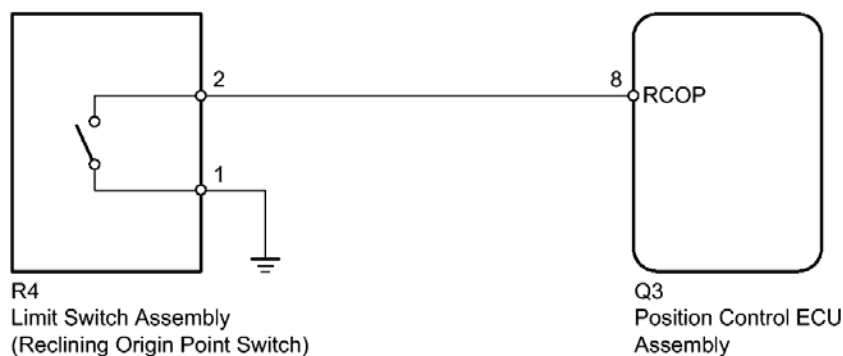


Fig. 31: Reclining Origin Point Limit Switch Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto

access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.

- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.
- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

1. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)

- a. Disconnect the R4 limit switch assembly (reclining origin point switch) connector.

*a

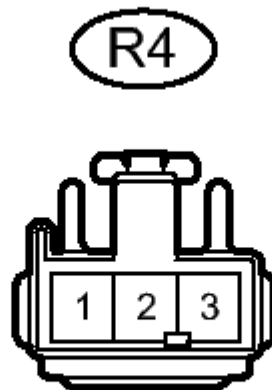


Fig. 32: Checking R4 Limit Switch Assembly (Reclining Origin Point Switch)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Condition	Specified Condition
R4-2 -		

Body ground	Always	11 to 14 V
-------------	--------	------------

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Limit Switch Assembly (Reclining Origin Point Switch))
----	---

- c. Reconnect the limit switch assembly (reclining origin point switch) connector.

NG --> See step 4

OK: Go to next step

2. INSPECT LIMIT SWITCH ASSEMBLY (RECLINING ORIGIN POINT SWITCH)

- a. Remove the limit switch assembly (reclining origin point switch). Refer to DISASSEMBLY .

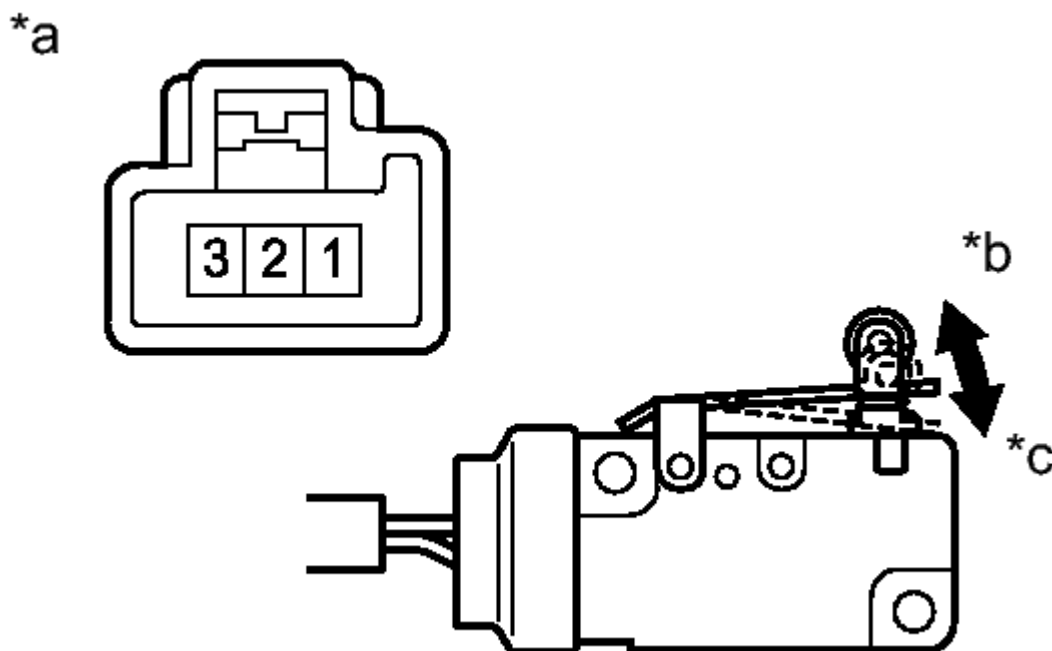


Fig. 33: Inspecting Limit Switch Assembly (Reclining Origin Point Switch)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
1 - 2	Not Pushed (off)	10 kohms or higher
	Pushed (on)	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Limit Switch Assembly (Reclining Origin Point Switch))
*b	Not Pushed (off)
*c	Pushed (on)

- c. Reinstall the limit switch assembly (reclining origin point switch).

NG --> See step 5

OK: Go to next step

3. CHECK HARNESS AND CONNECTOR (RECLINING ORIGIN POINT SWITCH - BODY GROUND)

- a. Disconnect the R4 limit switch assembly (reclining origin point switch) connector.

*a

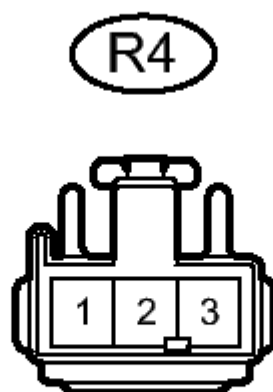


Fig. 34: Checking R4 Limit Switch Assembly (Reclining Origin Point Switch)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
R4-1 - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Limit Switch Assembly (Reclining Origin Point Switch))
----	---

- c. Reconnect the limit switch assembly (reclining origin point switch) connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 6

4. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU - RECLINING ORIGIN POINT SWITCH)

- a. Disconnect the Q3 position control ECU assembly connector.
- b. Disconnect the R4 limit switch assembly (reclining origin point switch) connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q3-8 (RCOP) - R4-2	Always	Below 1 ohms
Q3-8 (RCOP) - Body ground	Always	10 kohms or higher
R4-1 - Body ground	Always	Below 1 ohms

- d. Reconnect the limit switch assembly (reclining origin point switch) connector.
- e. Reconnect the position control ECU assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 7

- 5. **REPLACE LIMIT SWITCH ASSEMBLY (RECLINING ORIGIN POINT SWITCH). Refer to DISASSEMBLY**
- 6. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**
- 7. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

DTC 42: FRONT-REAR SLIDE ORIGIN POINT LIMIT SWITCH MALFUNCTION

DESCRIPTION

When the power seat switch assembly (front-rear slide switch) or the No. 2 power seat switch assembly (front-

rear slide switch) has been operated, the position control ECU assembly outputs driving voltage to drive the power seat motor assembly (front-rear slide motor). When the auto access seat reaches the front-rear slide origin point position, the limit switch assembly (front-rear slide origin point switch) operates to send the origin point position signal to the position control ECU assembly.

DTC No.	DTC Detection Condition	Trouble Area
42	During access seat mode or power seat mode operation, there is a malfunction in the limit switch assembly (front-rear slide origin point switch)	• Limit switch assembly (front-rear slide origin point switch) • Harness or connector • Position control ECU assembly

WIRING DIAGRAM

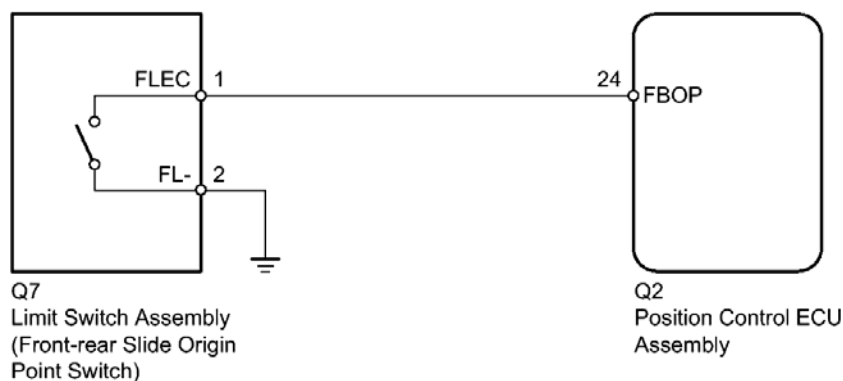


Fig. 35: Front-Rear Slide Origin Point Limit Switch Circuit - Wiring Diagram

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.
- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .

- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

1. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)

- Disconnect the Q7 limit switch assembly (front-rear slide origin point switch) connector.

*a



Fig. 36: Checking Q7 Limit Switch Assembly (Front-Rear Slide Origin Point Switch)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Condition	Specified Condition
Q7-1 (FLEC) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

Front view of wire

*a	harness connector (to Limit Switch Assembly (Front- rear Slide Origin Point Switch))
----	---

- c. Reconnect the limit switch assembly (front-rear slide origin point switch) connector.

NG --> See step 4

OK: Go to next step

2. INSPECT LIMIT SWITCH ASSEMBLY (FRONT-REAR SLIDE ORIGIN POINT SWITCH)

- a. Remove the limit switch assembly (front-rear slide origin point switch). Refer to DISASSEMBLY.

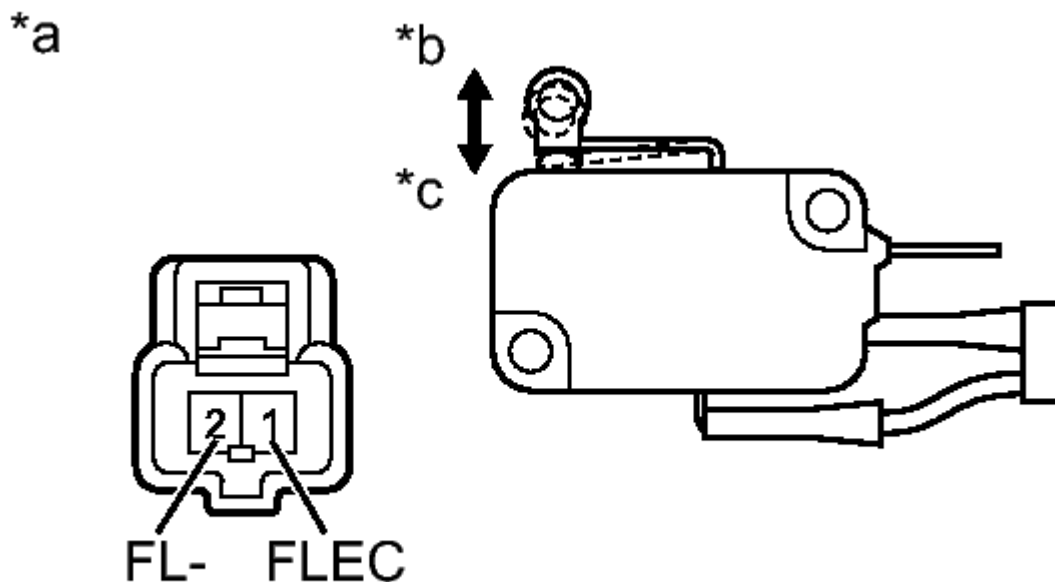


Fig. 37: Inspecting Limit Switch Assembly (Front-Rear Slide Origin Point Switch)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
1 (FLEC) - 2 (FL-)	Not Pushed (off)	10 kohms or higher
	Pushed (on)	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Limit Switch Assembly (Front-rear Slide Origin Point Switch))
*b	Not Pushed (off)
*c	Pushed (on)

- c. Reinstall the limit switch assembly (front-rear slide origin point switch).

NG --> See step 5

OK: Go to next step

3. CHECK HARNESS AND CONNECTOR (FRONT-REAR SLIDE ORIGIN POINT SWITCH - BODY GROUND)

- a. Disconnect the Q7 limit switch assembly (front-rear slide origin point switch) connector.

*a



Fig. 38: Checking Q7 Limit Switch Assembly (Front-Rear Slide Origin Point Switch)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q7-2 (FL-) - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Limit Switch Assembly (Front- rear Slide Origin Point Switch))
----	---

- c. Reconnect the limit switch assembly (front-rear slide origin point switch) connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 6

4. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU - FRONT-REAR SLIDE ORIGIN POINT SWITCH)

- a. Disconnect the Q2 position control ECU assembly connector.
- b. Disconnect the Q7 limit switch assembly (front-rear slide origin point switch) connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q2-24 (FBOP) - Q7-1 (FLEC)	Always	Below 1 ohms
Q2-24 (FBOP) - Body ground	Always	10 kohms or higher
Q7-2 (FL-) - Body ground	Always	Below 1 ohms

- d. Reconnect the limit switch assembly (front-rear slide origin point switch) connector.
- e. Reconnect the position control ECU assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 7

- 5. **REPLACE LIMIT SWITCH ASSEMBLY (FRONT-REAR SLIDE ORIGIN POINT SWITCH). Refer to DISASSEMBLY**
- 6. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**
- 7. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

DTC 43: SWIVEL ORIGIN POINT LIMIT SWITCH MALFUNCTION

DESCRIPTION

When the No. 2 power seat switch assembly (ingress and egress switch) has been operated in the ingress direction, the position control ECU assembly outputs driving voltage to drive the power seat motor assembly (swivel motor) in the swivel right direction. When the auto access seat reaches the swivel origin point position, the limit switch assembly (swivel origin point switch) operates to send the origin point position signal to the position control ECU assembly.

DTC No.	DTC Detection Condition	Trouble Area
43	During access seat mode or power seat mode operation, there is a malfunction in the limit switch assembly (swivel origin point switch).	- Limit switch assembly (swivel origin point switch) - Harness or connector - Position control ECU assembly

WIRING DIAGRAM

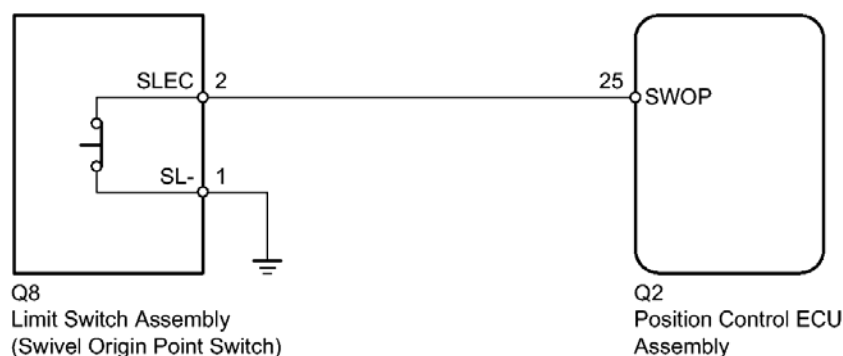


Fig. 39: Swivel Origin Point Limit Switch Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.
- After inspecting and repairing the auto access seat, be sure to perform

initialization. Refer to INITIALIZATION .

- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)**
 - a. Disconnect the Q8 limit switch assembly (swivel origin point switch) connector.

*a

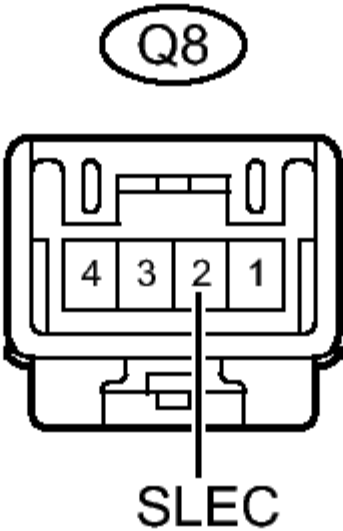


Fig. 40: Checking Q8 Limit Switch Assembly (Swivel Origin Point Switch)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Condition	Specified Condition
Q8-2 (SLEC) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

Front view of

Tester Connection	Switch Condition	Specified Condition
2 (SLEC) - 1 (SL-)	Not Pushed (off)	Below 1 ohms
	Pushed (on)	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Component without harness connected (Limit Switch Assembly (Swivel Origin Point Switch))
*b	Not Pushed (off)
*c	Pushed (on)

- c. Reinstall the limit switch assembly (swivel origin point switch).

NG --> See step 5

OK: Go to next step

3. CHECK HARNESS AND CONNECTOR (SWIVEL ORIGIN POINT SWITCH - BODY GROUND)

- a. Disconnect the Q8 limit switch assembly (swivel origin point switch) connector.

*a

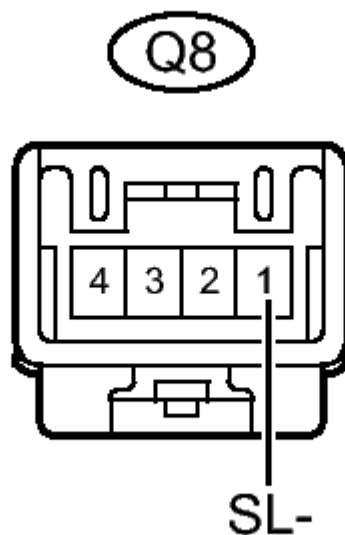


Fig. 42: Checking Q8 Limit Switch Assembly (Swivel Origin Point Switch)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q8-1 (SL-) - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Limit Switch Assembly (Swivel Origin Point Switch))
----	--

- c. Reconnect the limit switch assembly (swivel origin point switch) connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 6

4. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU - SWIVEL ORIGIN POINT SWITCH)

- a. Disconnect the Q2 position control ECU assembly connector.
- b. Disconnect the Q8 limit switch assembly (swivel origin point switch) connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q2-25 (SWOP) - Q8-2 (SLEC)	Always	Below 1 ohms
Q2-25 (SWOP) - Body ground	Always	10 kohms or higher
Q8-1 (SL-) - Body ground	Always	Below 1 ohms

- d. Reconnect the limit switch assembly (swivel origin point switch) connector.
- e. Reconnect the position control ECU assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 7

- 5. **REPLACE LIMIT SWITCH ASSEMBLY (SWIVEL ORIGIN POINT SWITCH).** Refer to **DISASSEMBLY**
- 6. **USE SIMULATION METHOD TO CHECK.** Refer to **HOW TO PROCEED WITH TROUBLESHOOTING**
- 7. **REPLACE POSITION CONTROL ECU ASSEMBLY.** Refer to **DISASSEMBLY**

DTC 44: OUTWARD SLIDE ORIGIN POINT LIMIT SWITCH MALFUNCTION

DESCRIPTION

When the No. 2 power seat switch assembly (ingress and egress switch) has been operated in the ingress direction, the position control ECU assembly outputs driving voltage to drive the power seat motor assembly (outward slide motor). When the auto access seat reaches the slide origin point position, the limit switch assembly (outward slide origin point switch) operates to send the origin point position signal to the position control ECU assembly.

DTC No.	DTC Detection Condition	Trouble Area
44	During access seat mode or power seat mode operation, there is a malfunction in the limit switch assembly (outward slide origin point switch).	- Limit switch assembly (outward slide origin point switch) - Harness or connector - Position control ECU assembly

WIRING DIAGRAM

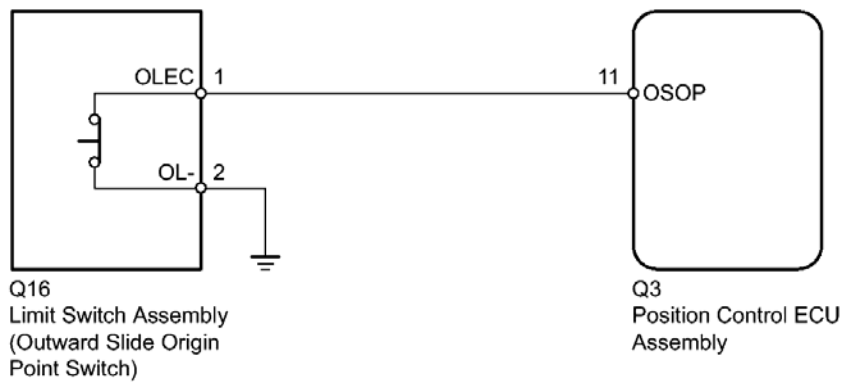


Fig. 43: Outward Slide Origin Point Limit Switch Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.
- After inspecting and repairing the auto access seat, be sure to perform

initialization. Refer to INITIALIZATION .

- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

1. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)

- a. Disconnect the Q16 limit switch assembly (outward slide origin point switch) connector.

*a



Fig. 44: Checking Q16 Limit Switch Assembly (Outward Slide Origin Point Switch)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Condition	Specified Condition
Q16-1 (OLEC) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

Front view of

wire harness connector (to Limit Switch *a Assembly (Outward Slide Origin Point Switch))
--

- c. Reconnect the limit switch assembly (outward slide origin point switch) connector.

NG --> See step 4

OK: Go to next step

2. INSPECT LIMIT SWITCH ASSEMBLY (OUTWARD SLIDE ORIGIN POINT SWITCH)

- a. Remove the limit switch assembly (outward slide origin point switch). Refer to **DISASSEMBLY** .

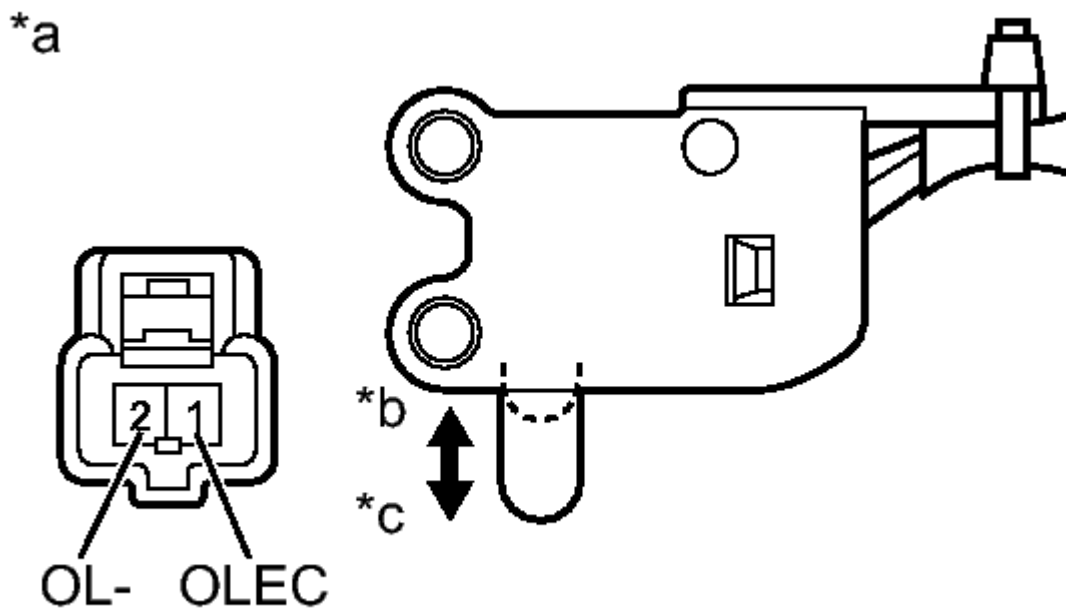


Fig. 45: Inspecting Limit Switch Assembly (Outward Slide Origin Point Switch)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
1 (OLEC) - 2 (OL-)	Not Pushed (off)	Below 1 ohms
	Pushed (on)	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Component without harness connected (Limit Switch Assembly (Outward Slide Origin Point Switch))
*b	Pushed (on)
*c	Not Pushed (off)

- c. Reinstall the limit switch assembly (outward slide origin point switch).

NG --> See step 5

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (OUTWARD SLIDE ORIGIN POINT SWITCH - BODY GROUND)**
 - a. Disconnect the Q16 limit switch assembly (outward slide origin point switch) connector.

*a



Fig. 46: Checking Q16 Limit Switch Assembly (Outward Slide Origin Point Switch)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q16-2 (OL-) - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Limit Switch Assembly (Outward Slide Origin Point Switch))
----	---

- c. Reconnect the limit switch assembly (outward slide origin point switch) connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 6

4. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU - OUTWARD SLIDE ORIGIN POINT SWITCH)

- a. Disconnect the Q3 position control ECU assembly connector.
- b. Disconnect the Q16 limit switch assembly (outward slide origin point switch) connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q3-11 (OSOP) - Q16-1 (OLEC)	Always	Below 1 ohms
Q3-11 (OSOP) - Body ground	Always	10 kohms or higher
Q16-2 (OL-) - Body ground	Always	Below 1 ohms

- d. Reconnect the limit switch assembly (outward slide origin point switch) connector.
- e. Reconnect the position control ECU assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 7

5. **REPLACE LIMIT SWITCH ASSEMBLY (OUTWARD SLIDE ORIGIN POINT SWITCH). Refer to DISASSEMBLY**
6. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**
7. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

DTC 45: UPPER END LIMIT SWITCH MALFUNCTION

DESCRIPTION

When the No. 2 power seat switch assembly (ingress and egress switch) has been operated in the ingress direction, the position control ECU assembly outputs driving voltage to drive the access seat cylinder assembly (up-down motor). When the auto access seat reaches the upper end position, the limit switch assembly (upper end switch) operates to send the upper end position signal to the position control ECU assembly.

DTC No.	DTC Detection Condition	Trouble Area
45	During access seat mode or power seat mode operation, there is a malfunction in the limit switch assembly (upper end switch)	• Limit switch assembly (upper end switch) • Harness or connector • Position control ECU assembly

WIRING DIAGRAM

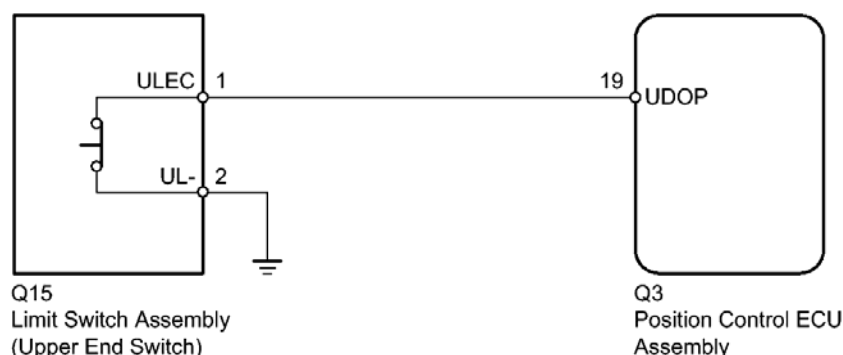


Fig. 47: Upper End Limit Switch Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.
- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto

access seat. Refer to OPERATION CHECK .

PROCEDURE

- 1. **CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)**
 - a. Disconnect the Q15 limit switch assembly (upper end switch) connector.

*a

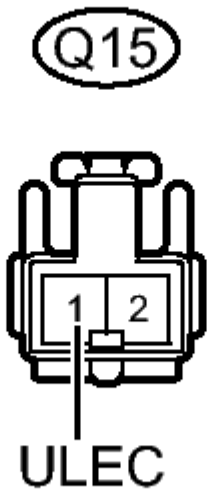


Fig. 48: Checking Q15 Limit Switch Assembly (Upper End Switch)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Condition	Specified Condition
Q15-1 (ULEC) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

Front view of wire harness

connector (to Limit Switch *a Assembly (Upper End Switch))
--

c. Reconnect the limit switch assembly (upper end switch) connector.

NG --> See step 4

OK: Go to next step

2. INSPECT LIMIT SWITCH ASSEMBLY (UPPER END SWITCH)

a. Remove the limit switch assembly (upper end switch). Refer to DISASSEMBLY .

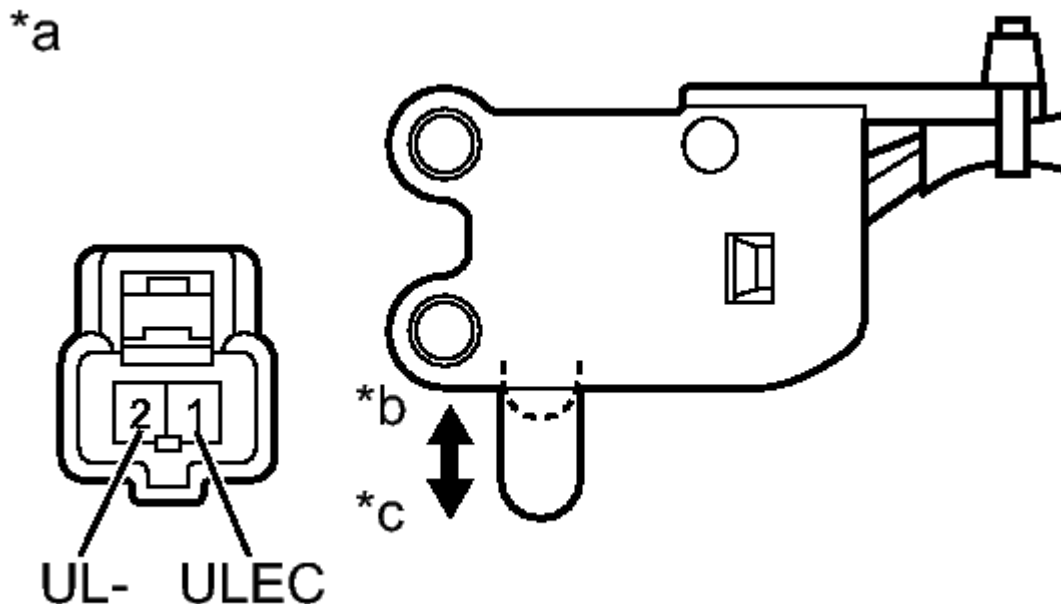


Fig. 49: Inspecting Limit Switch Assembly (Upper End Switch)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Switch Condition	Specified Condition

1 (ULEC) - 2 (UL-)	Not Pushed (off)	Below 1 ohms
	Pushed (on)	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Component without harness connected (Limit Switch Assembly (Upper End Switch))
*b	Pushed (on)
*c	Not Pushed (off)

- c. Reinstall the limit switch assembly (upper end switch).

NG --> See step 5

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (UPPER END SWITCH - BODY GROUND)**
 - a. Disconnect the Q15 limit switch assembly (upper end switch) connector.

*a



Fig. 50: Checking Q15 Limit Switch Assembly (Upper End Switch)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q15-2 (UL-) - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Limit Switch Assembly (Upper End Switch))
----	--

- c. Reconnect the limit switch assembly (upper end switch) connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 6

4. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU - UPPER END SWITCH)

- a. Disconnect the Q3 position control ECU assembly connector.
- b. Disconnect the Q15 limit switch assembly (upper end switch) connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q3-19 (UDOP) - Q15-1 (ULEC)	Always	Below 1 ohms
Q3-19 (UDOP) - Body ground	Always	10 kohms or higher
Q15-2 (UL-) - Body ground	Always	Below 1 ohms

- d. Reconnect the limit switch assembly (upper end switch) connector.
- e. Reconnect the position control ECU assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 7

5. **REPLACE LIMIT SWITCH ASSEMBLY (UPPER END SWITCH). Refer to DISASSEMBLY**
6. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**
7. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

DTC 73: MECHANICAL LOCK NOT DETECTED ERROR

DESCRIPTION

During access seat mode swivel operation in the egress direction, while in the swivel terminal position of the swivel motor (mechanical lock detection area), the seat turn lock plate sub-assembly contacts the turn table panel sub-assembly, and the position control ECU assembly detects an excessive load condition for the swivel motor.

DTC No.	DTC Detection Condition	Trouble Area
73	During access seat mode operation in the egress direction, the swivel motor passes the upper limit mechanical lock area but excessive load is not detected	Seat turn lock plate sub-assembly

INSPECTION PROCEDURE

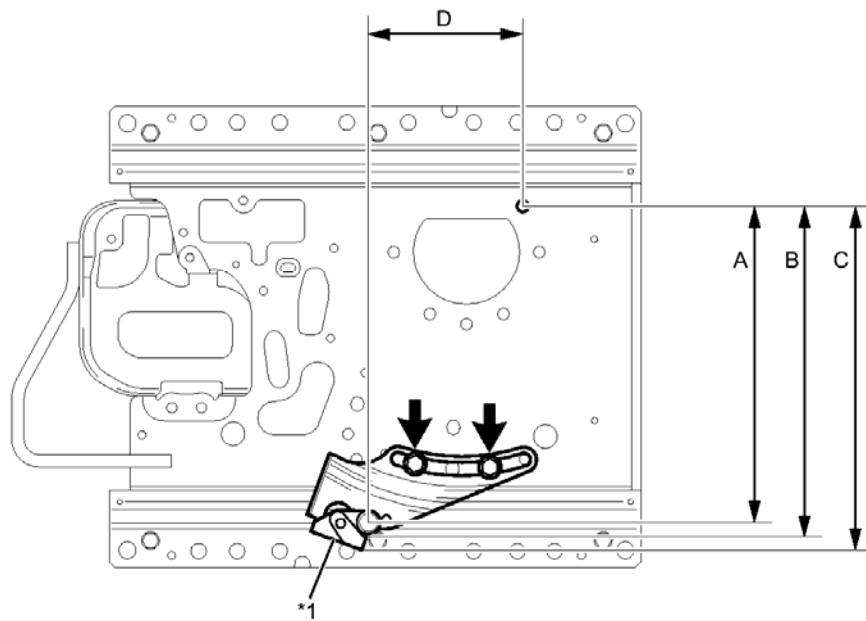
NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.
- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

1. CHECK INSTALL PARTS CORRECTLY (SEAT TURN LOCK PLATE SUB-ASSEMBLY)

- Remove the auto access seat unit. Refer to REMOVAL .
- Disassemble the auto access seat unit until it is in the condition shown in the illustration. Refer to DISASSEMBLY .
- Using a vernier caliper, adjust the position of the seat turn lock plate to the specifications below.



P

Fig. 51: Checking Proper Installation For Seat Turn Lock Plate Sub-Assembly
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Seat Turn Lock Plate Sub- assembly	--
----	---	----

Standard

Location	Standard Length
A	244.5 to 245.5 mm (9.626 to 9.665 in.)
B	256.2 mm (10.087 in.)
	266.6

C	mm (10.480 in.)
D	120.3 to 121.3 mm (4.736 to 4.776 in.)

NG --> See step 2

OK --> See step 3

2. **ADJUST OR REPLACE SEAT TURN LOCK PLATE SUB-ASSEMBLY.** Refer to **REASSEMBLY - Step 7**
3. **REPLACE POSITION CONTROL ECU ASSEMBLY.** Refer to **DISASSEMBLY - Step 2**

DTC 81: BUCKLE FAILURE

DESCRIPTION

Based on the signal from the rear seat 3 point type belt assembly RH, the position control ECU assembly decides whether or not to permit access seat mode operation. For this reason, access seat mode operation is not possible while the tongue plate is inserted into the rear seat 3 point type belt assembly.

DTC No.	DTC Detection Condition	Trouble Area
81	During access mode operation, there is a malfunction in the rear seat 3 point type belt assembly	• Rear seat 3 point type belt assembly RH • Harness or connector • Position control ECU assembly

WIRING DIAGRAM

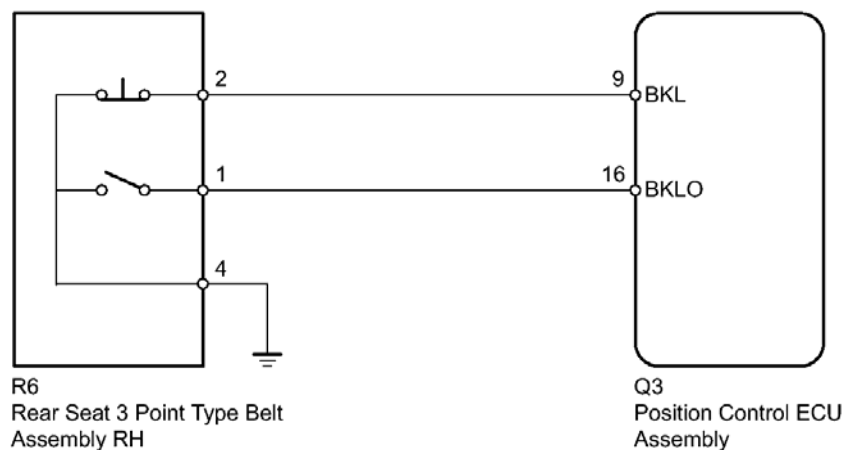


Fig. 52: Rear Seat 3 Point Type Belt Assembly RH Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.
- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY)**
 - a. Disconnect the R6 rear seat 3 point type belt assembly RH connector.

*a

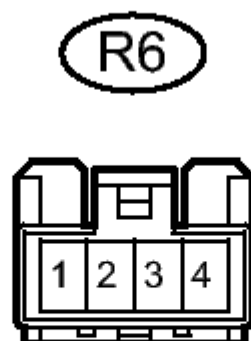


Fig. 53: Checking R6 Rear Seat 3 Point Type Belt Assembly RH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Condition	Specified Condition
R6-1 - Body ground	Always	11 to 14 V
R6-2 - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Rear Seat 3 Point Type Belt Assembly)
----	--

|RH))

- c. Reconnect the rear seat 3 point type belt assembly RH connector.

NG --> See step 4

OK: Go to next step

2. INSPECT REAR SEAT 3 POINT TYPE BELT ASSEMBLY RH

- a. Remove the rear seat 3 point type belt assembly RH. Refer to **REMOVAL** .

*a



Fig. 54: Inspecting Rear Seat 3 Point Type Belt Assembly RH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
1 - 4	Tongue plate unfastened	10 kohms or higher
	Tongue plate fastened	Below 1 ohms

2 - 4	Tongue plate unfastened	Below 1 ohms
	Tongue plate fastened	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Component without harness connected (Rear Seat 3 point Type Belt Assembly RH)
----	---

- c. Reinstall the rear seat 3 point type belt assembly RH.

NG --> See step 5

OK: Go to next step

3. CHECK HARNESS AND CONNECTOR (REAR SEAT 3 POINT TYPE BELT ASSEMBLY RH - BODY GROUND)

- a. Disconnect the R6 rear seat 3 point type belt assembly RH connector.

*a

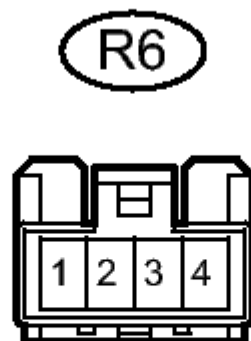


Fig. 55: Checking R6 Rear Seat 3 Point Type Belt Assembly RH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
R6-4 - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Rear Seat 3 Point Type Belt Assembly RH))
----	--

- c. Reconnect the rear seat 3 point type belt assembly RH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 6

4. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU - REAR SEAT 3 POINT TYPE BELT ASSEMBLY)

- a. Disconnect the Q3 position control ECU assembly connector.
- b. Disconnect the R6 rear seat 3 point type belt assembly RH connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q3-9 (BKL) - R6-2	Always	Below 1 ohms
Q3-9 (BKL) - Body ground	Always	10 kohms or higher
Q3-16 (BKLO) - R6-1	Always	10 kohms or higher
Q3-16 (BKLO) - Body ground	Always	Below 1 ohms
R6-4 - Body ground	Always	Below 1 ohms

- d. Reconnect the rear seat 3 point type belt assembly RH connector.
- e. Reconnect the position control ECU assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 7

5. **REPLACE REAR SEAT 3 POINT TYPE BELT ASSEMBLY RH. Refer to REMOVAL**
6. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**
7. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

SYMPTOM TESTS

Auto Access Seat does not Operate (Buzzer does not Sound)

DESCRIPTION

The operation of the auto access seat is limited by each limit switch and the pulse sensor of each motor. When the power supply voltage is 10.5 V or more, and the requirements for operation have been fulfilled. Refer to **OPERATION CHECK**, the position control ECU assembly drives each motor and performs egress and ingress operations according to inputs from the No. 2 power seat switch assembly (ingress and egress switch). If there is a malfunction in any limit switch or the pulse sensor of any motor, the position control ECU assembly will sound the malfunction buzzer and will halt operation of the seat even when input from the No. 2 power seat switch assembly (ingress and egress switch) is received.

WIRING DIAGRAM

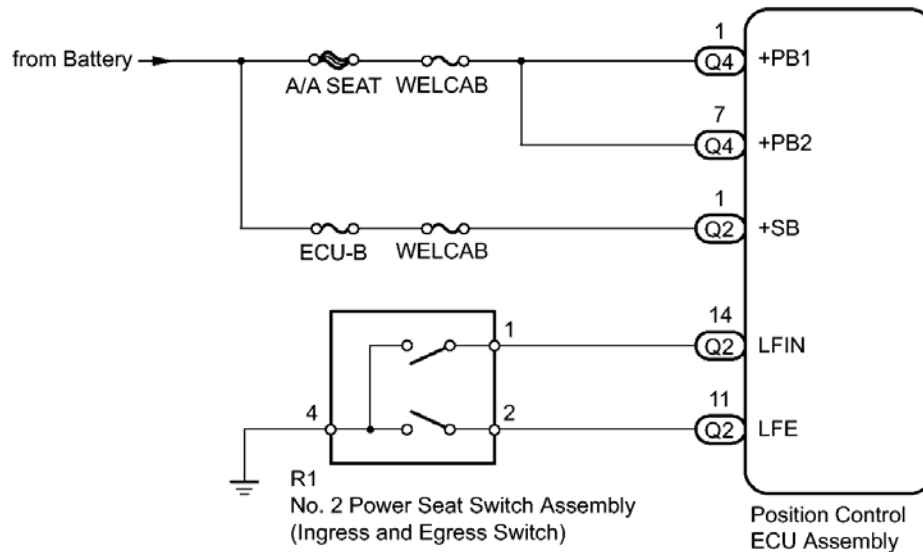


Fig. 56: No. 2 Power Seat Switch (Ingress & Egress) Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to **INITIALIZATION** and verify the auto access seat operation. If the seat is

still malfunctioning, perform the troubleshooting procedure.

- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to INITIALIZATION .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to OPERATION CHECK .
- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. CHECK POSITION CONTROL ECU ASSEMBLY

- a. Measure the voltage according to the value(s) in the table below.

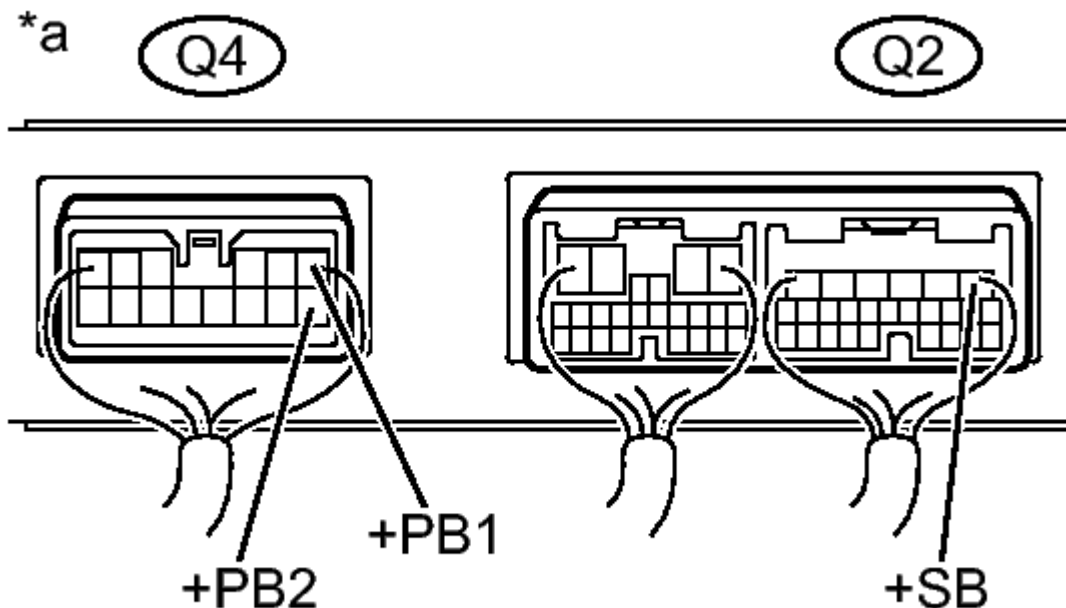


Fig. 57: Checking Q4 & Q2 Position Control ECU Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Condition	Specified Condition
Q2-1 (+SB) - Body ground	Always	11 to 14 V
Q4-1 (+PB1) - Body	Always	11 to 14 V

ground		
Q4-7 (+PB2) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

*a	Component with harness connected (Position Control ECU Assembly)
----	---

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

2. CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - NO. 2 POWER SEAT SWITCH ASSEMBLY)

- Disconnect the Q2 position control ECU assembly connector.
- Disconnect the R1 No. 2 power seat switch assembly (ingress and egress switch) connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q2-14 (LFIN) - R1-1	Always	Below 1 ohms
Q2-11 (LFE) - R1- 2	Always	Below 1 ohms
Q2-14 (LFIN) - Body ground	Always	10 kohms or higher
Q2-11 (LFE) - Body ground	Always	10 kohms or higher

- d. Reconnect the No. 2 power seat switch assembly (ingress and egress switch) connector.
- e. Reconnect the position control ECU assembly connector.

NG --> **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK: Go to next step

- 3. **INSPECT NO. 2 POWER SEAT SWITCH ASSEMBLY (INGRESS AND EGRESS SWITCH)**
 - a. Remove the No. 2 power seat switch assembly (ingress and egress switch). Refer to **REMOVAL**.

*a

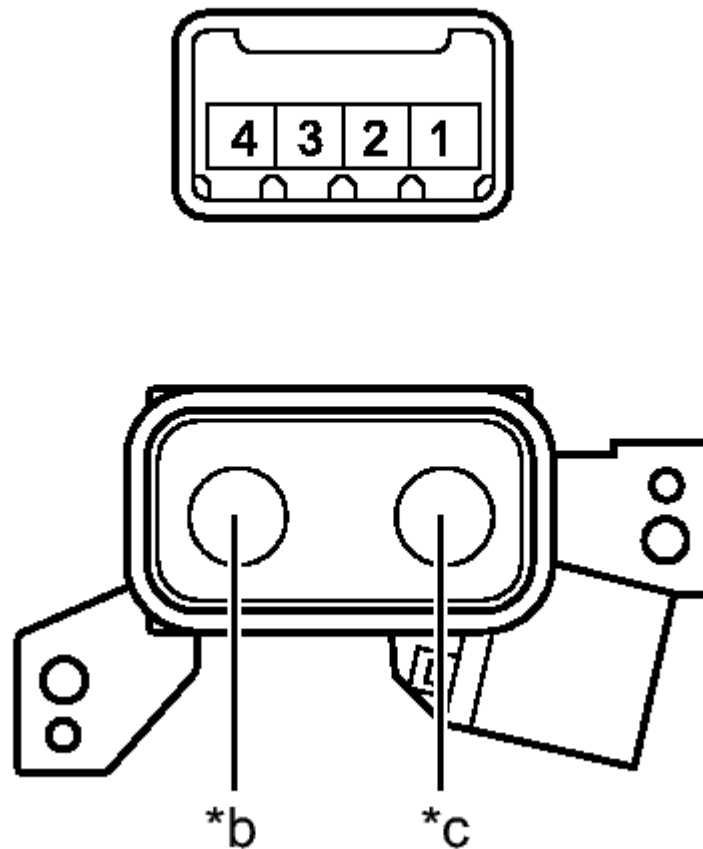


Fig. 58: Inspecting No. 2 Power Seat Switch Assembly (Ingress And Egress Switch)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
1 - 4	off	10 kohms or higher
	Ingress	Below 1 ohms
2 - 4	off	10 kohms or higher
	Egress	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (No. 2 Power Seat Switch Assembly (Ingress and Egress Switch))
*b	Egress Switch
*C	Ingress Switch

- c. Reinstall the No. 2 power seat switch assembly (ingress and egress switch).

NG --> See step 5

OK: Go to next step

4. CHECK HARNESS AND CONNECTOR (NO. 2 POWER SEAT SWITCH ASSEMBLY - BODY GROUND)

- a. Disconnect the R1 No. 2 power seat switch assembly (ingress and egress switch) connector.

*a

R1



Fig. 59: Checking R1 No. 2 Power Seat Switch Assembly (Ingress And Egress Switch)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
R1-4 - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to No. 2 Power Seat Switch Assembly (Ingress and Egress
----	---

|Switch))

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 6

5. **REPLACE NO. 2 POWER SEAT SWITCH ASSEMBLY (INGRESS AND EGRESS SWITCH).**
Refer to REMOVAL
6. **REPLACE POSITION CONTROL ECU ASSEMBLY.** Refer to DISASSEMBLY

Only Wireless Control Function is Inoperative

DESCRIPTION

The seat control receiver receives signals from the seat control transmitter and sends them to the position control ECU assembly. The position control ECU assembly controls egress and ingress operations.

WIRING DIAGRAM

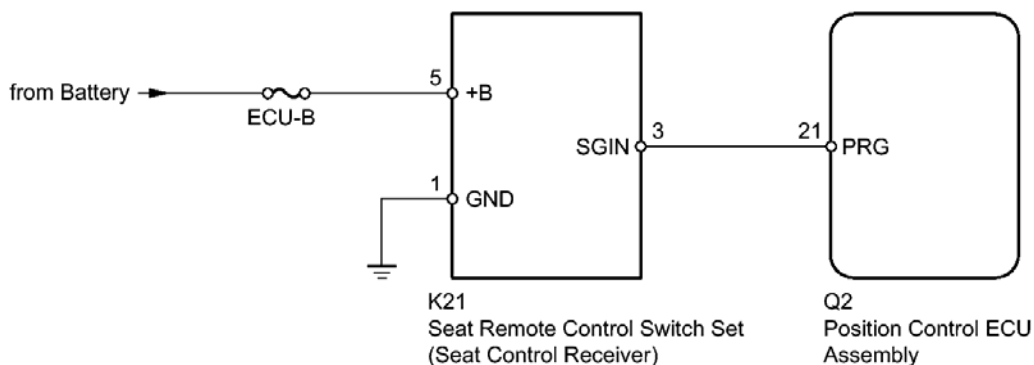


Fig. 60: Seat Control Receiver Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When there is a malfunction in the auto access seat, use independent operation mode to ingress the auto access seat. In this case, until the auto access seat has completed the ingress operation, do not disconnect the cable from the negative battery terminal.
- When there is a malfunction in the auto access seat, before beginning the troubleshooting procedure, first perform initialization. Refer to

INITIALIZATION and verify the auto access seat operation. If the seat is still malfunctioning, perform the troubleshooting procedure.

- After inspecting and repairing the auto access seat, be sure to perform initialization. Refer to **INITIALIZATION** .
- After performing initialization, be sure to inspect the operation of the auto access seat. Refer to **OPERATION CHECK** .
- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

The wireless control function operates within a 1 m (3.28 ft.) radius from the center of the seat.

PROCEDURE

1. CHECK WIRELESS CONTROL FUNCTION

- a. Check whether the wireless control function operates correctly when using a different seat control transmitter.

RESULT

Result	Proceed to
Wireless control function operates correctly	A
Wireless control function does not operate correctly	B

B --> See step 4

A: Go to next step

2. REPLACE TRANSMITTER BATTERY

- a. Replace the transmitter battery of the non-working seat control transmitter with a new battery or a battery that is known to be good. Refer to **REPLACEMENT** .

NEXT: Go to next step

3. CHECK TRANSMITTER BATTERY

- a. Confirm that the red LED of the seat control transmitter comes on when the ingress switch or egress switch of the seat control transmitter are pressed.

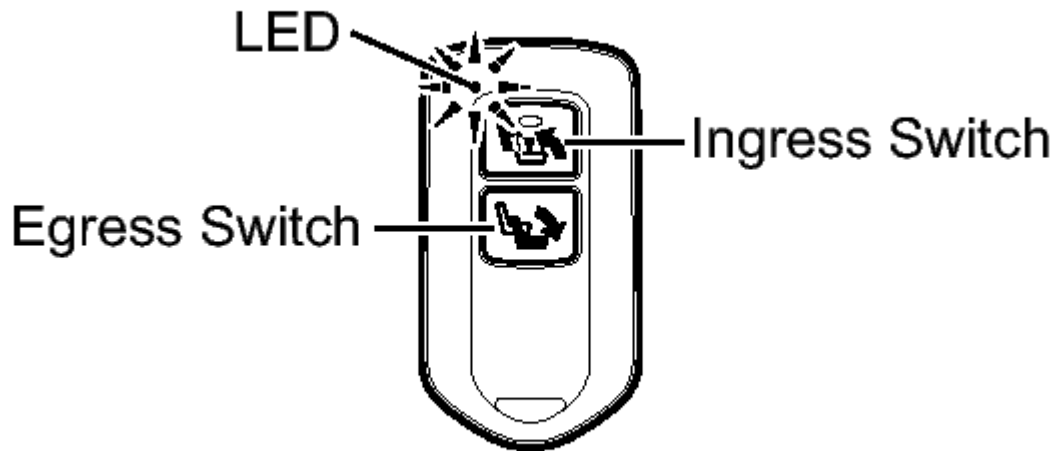


Fig. 61: Checking Transmitter Battery
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

RESULT

Result	Proceed to
Come on	A
Do not come on	B

B --> REPLACE SEAT REMOTE CONTROL SWITCH SET (SEAT CONTROL TRANSMITTER)

A --> END (TRANSMITTER BATTERY IS DEFECTIVE)

4. **CHECK HARNESS AND CONNECTOR (SEAT CONTROL RECEIVER - BATTERY AND BODY GROUND)**
 - a. Disconnect the K21 seat control receiver connector.

*a

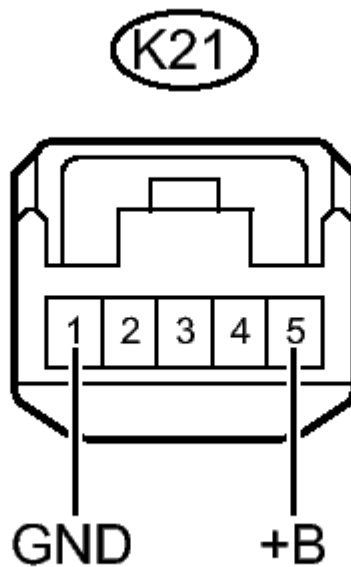


Fig. 62: Checking K21 Seat Control Receiver Connector
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage and resistance according to the value(s) in the table below.

Standard

Tester Connection	Condition	Specified Condition
K21-5 (+B) - Body ground	Always	11 to 14 V
K21-1 (GND) - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Seat Control Receiver)
----	---

- c. Reconnect the seat control receiver connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. HARNESS AND CONNECTOR (POSITION CONTROL ECU ASSEMBLY - SEAT CONTROL RECEIVER)

- a. Disconnect the Q2 position control ECU assembly connector.
- b. Disconnect the K21 seat control receiver connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Q2-21 (PRG) - K21-3 (SGIN)	Always	Below 1 ohms
Q2-21 (PRG) - Body ground	Always	10 kohms or higher

- d. Reconnect the seat control receiver connector.
- e. Reconnect the position control ECU assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

6. CHECK POSITION CONTROL ECU ASSEMBLY

- a. Measure the voltage and check for pulses according to the value(s) in the table below.

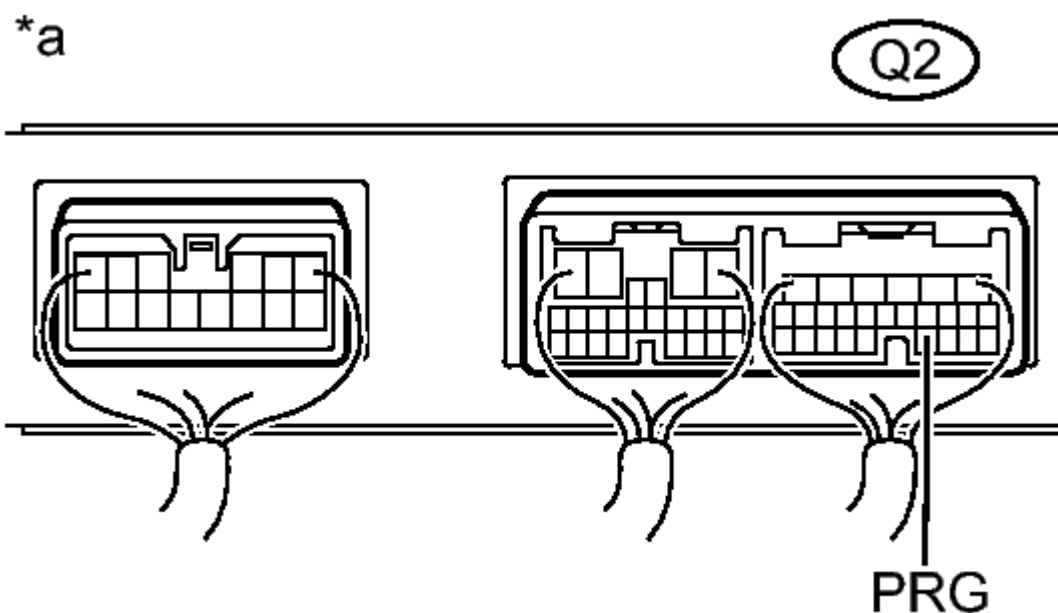


Fig. 63: Checking Position Control ECU Assembly
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Q2-21 (PRG) - Body ground	Seat control transmitter (ingress switch) off --> on	11 to 14 V --> Pulse generation

TEXT IN ILLUSTRATION

*a	Component with harness connected (Position Control ECU Assembly)
----	--

NG --> See step 7

OK --> See step 8

7. **REPLACE SEAT REMOTE CONTROL SWITCH SET (SEAT CONTROL RECEIVER). Refer to REMOVAL**
8. **REPLACE POSITION CONTROL ECU ASSEMBLY. Refer to DISASSEMBLY**

ACCESSORIES & EQUIPMENT

Auto Access Seat System (Diagnostics - Introduction) - Sienna

AUTO ACCESS SEAT SYSTEM

PRECAUTION

PRECAUTION

1. PRECAUTIONS WHEN DISCONNECTING THE POWER SUPPLY

- a. If the power source is disconnected during auto access seat operation and the auto access seat position information is reset, the system enters independent operation mode. From independent operation mode, perform all zero point calibration procedures to restore the system. Refer to **INITIALIZATION**.
- b. If the power source is disconnected while the power slide door RH is open and the power slide door ECU RH position information is erased, the position control assembly will not be able to acquire the power slide door fully open information from the power slide door ECU RH, and so the auto access seat system will not function. Initialize the power slide door ECU RH in this case. Refer to **INITIALIZATION**.

2. PRECAUTIONS WHEN USING THE AUTO ACCESS SEAT

- a. After removing/installing, inspecting, or repairing the auto access seat, be sure initialize the position information and perform the auto access seat Diagnosis System and Operation Check.

HINT:

- Initializing Position Information. Refer to **INITIALIZATION**.
- Diagnosis System. Refer to **DIAGNOSIS SYSTEM**.
- Operation Check. Refer to **OPERATION CHECK**.

3. IGNITION SWITCH EXPRESSIONS

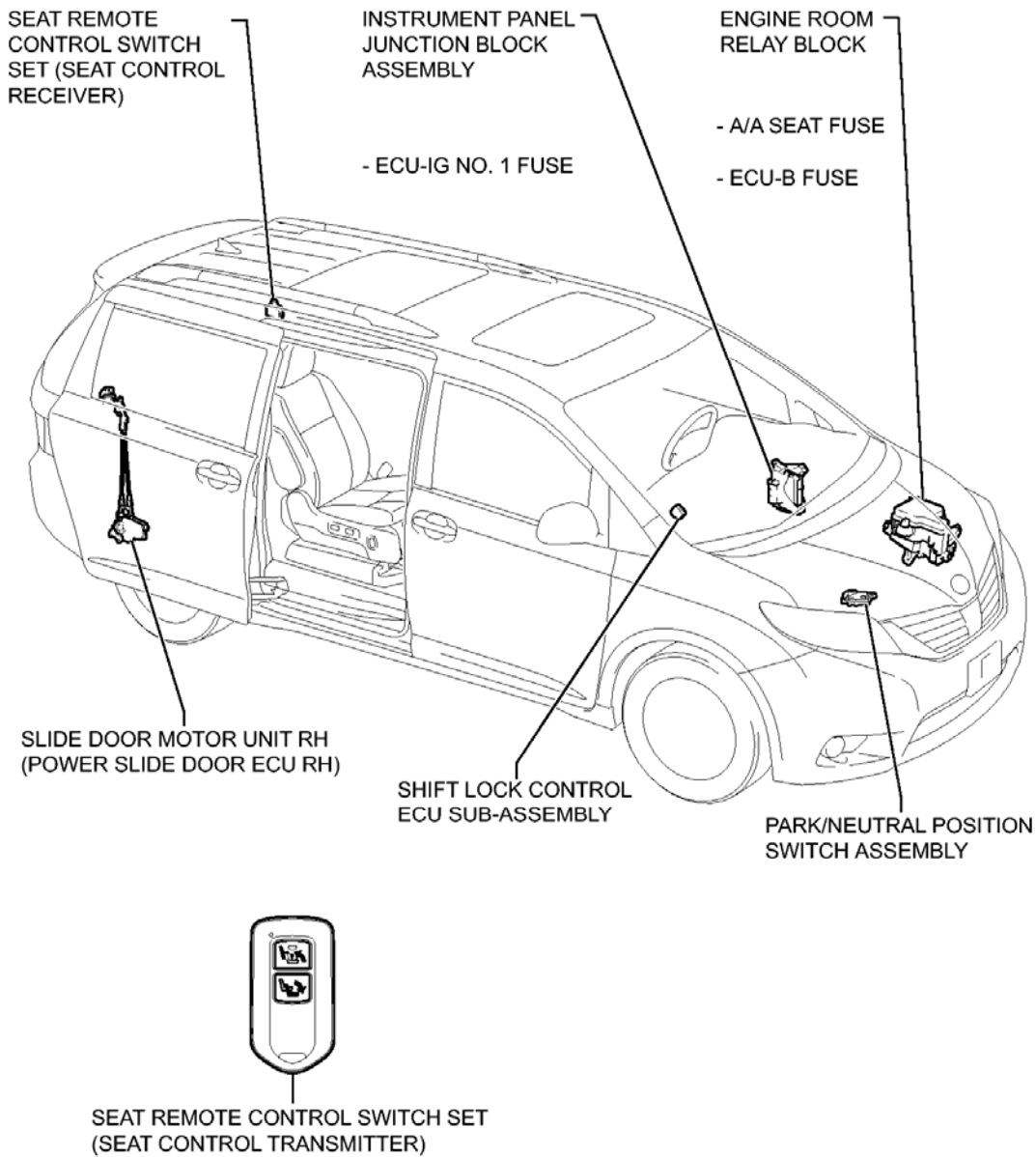
- a. The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this information.

Expression	Ignition Switch (Position)	Engine Switch (Condition)
Ignition switch off	LOCK	Off
Ignition switch ACC	ACC	On (ACC)
Ignition switch ON	ON	On (IG)
Engine	START	Start

start		
-------	--	--

PARTS LOCATION

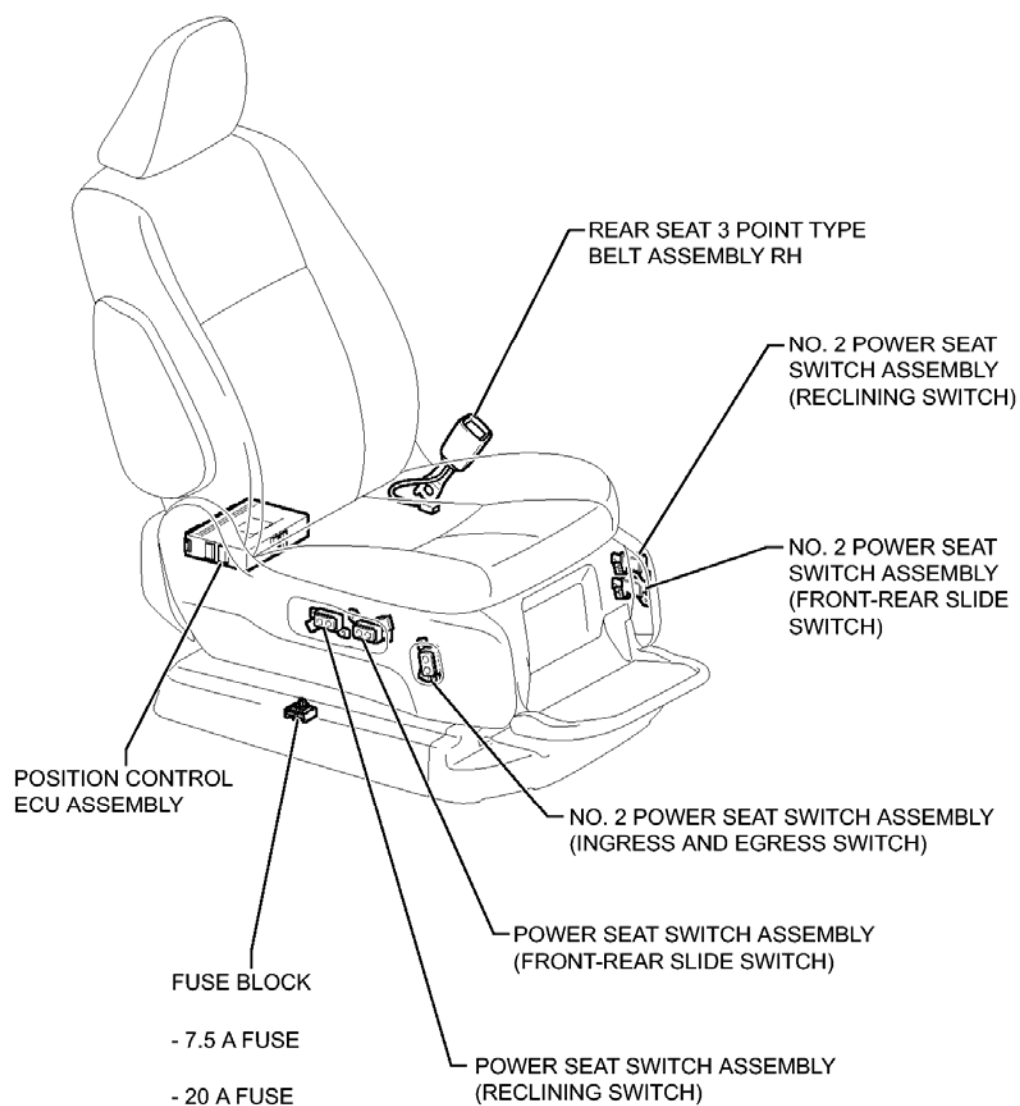
ILLUSTRATION



P

Fig. 1: Auto Access Seat System Components Location (1 Of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

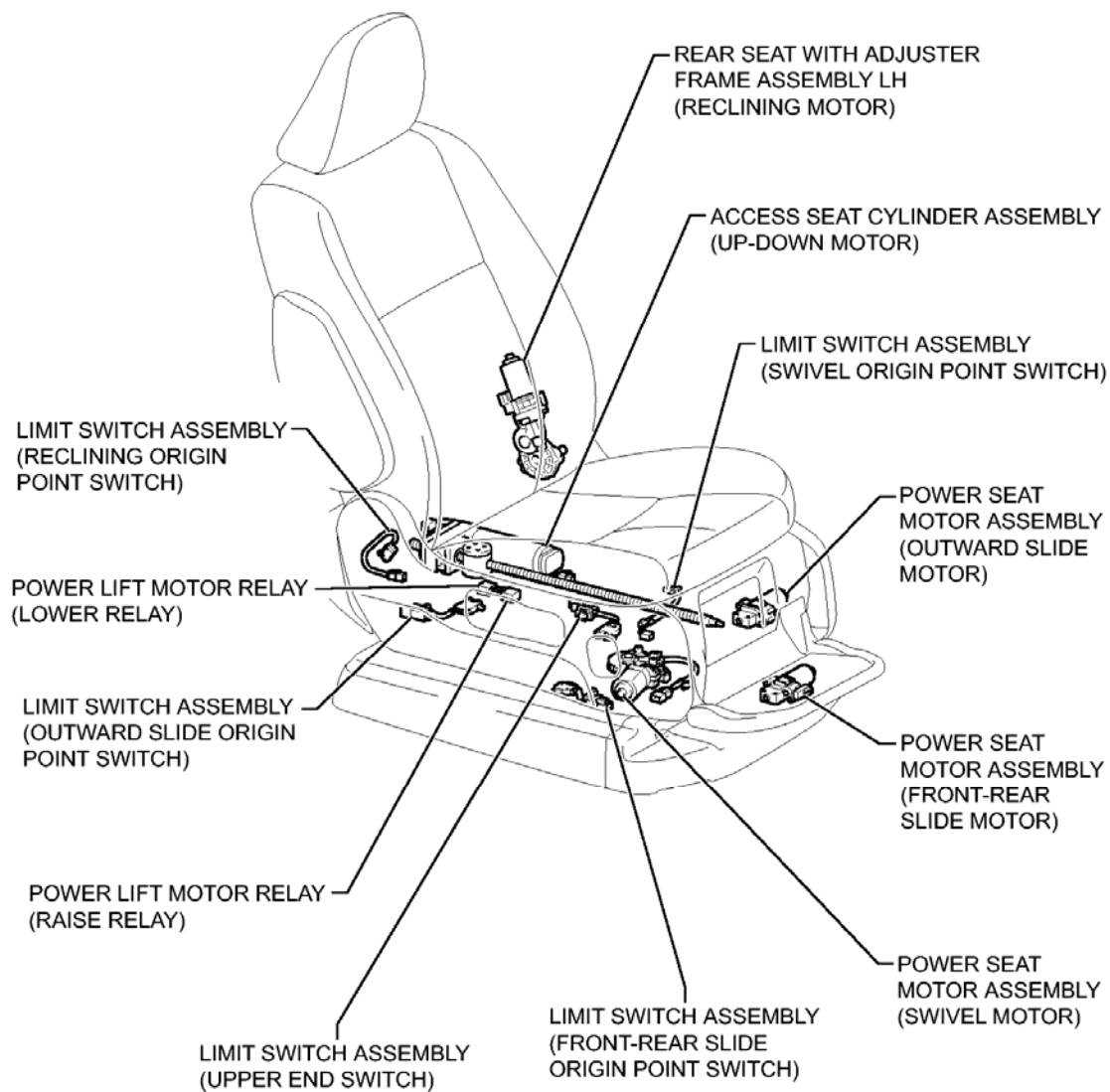
ILLUSTRATION



P

Fig. 2: Auto Access Seat System Components Location (2 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION



P

Fig. 3: Auto Access Seat System Components Location (3 Of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DIAGRAM

SYSTEM DIAGRAM

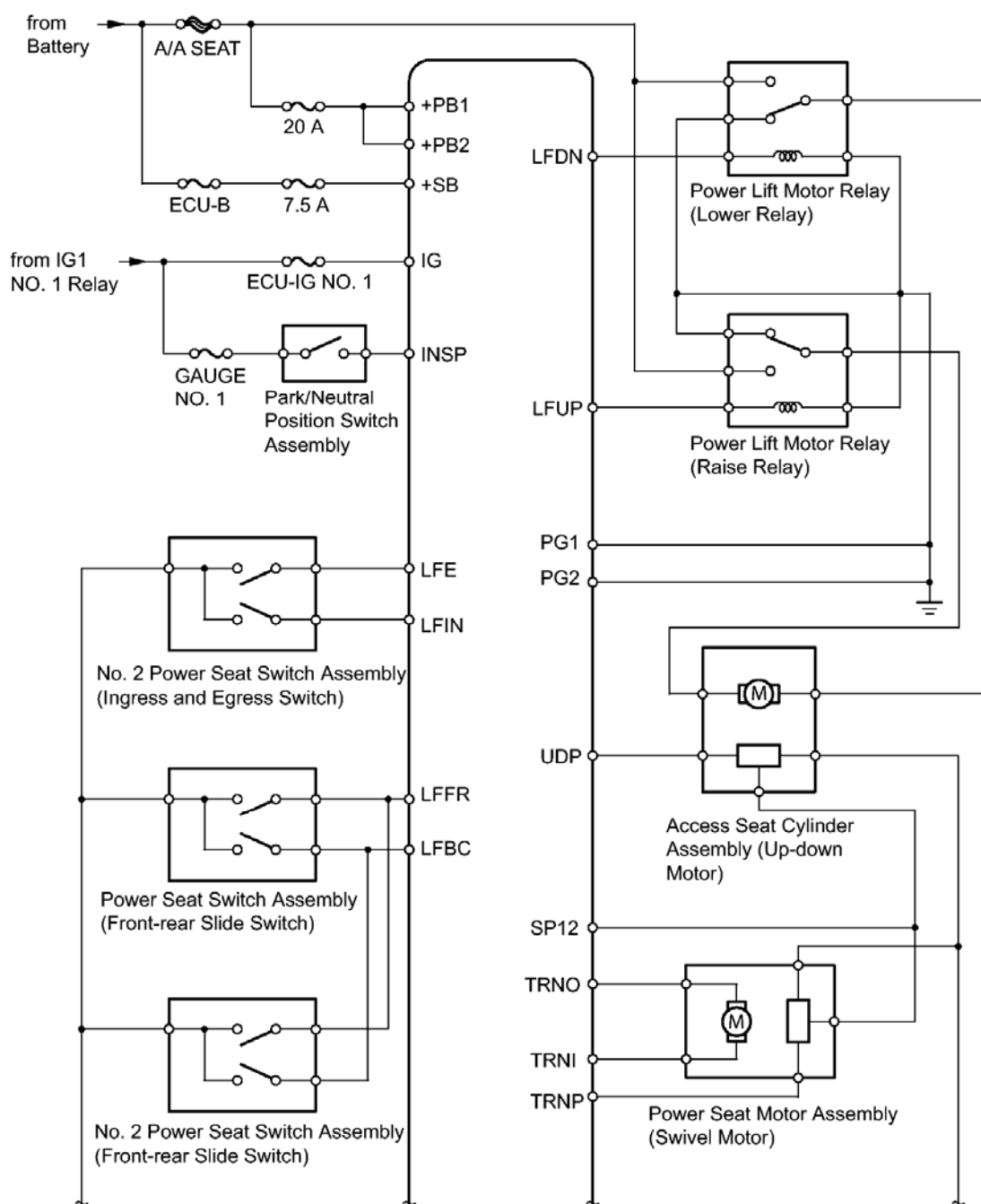


Fig. 4: Auto Access Seat System Diagram(1 Of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

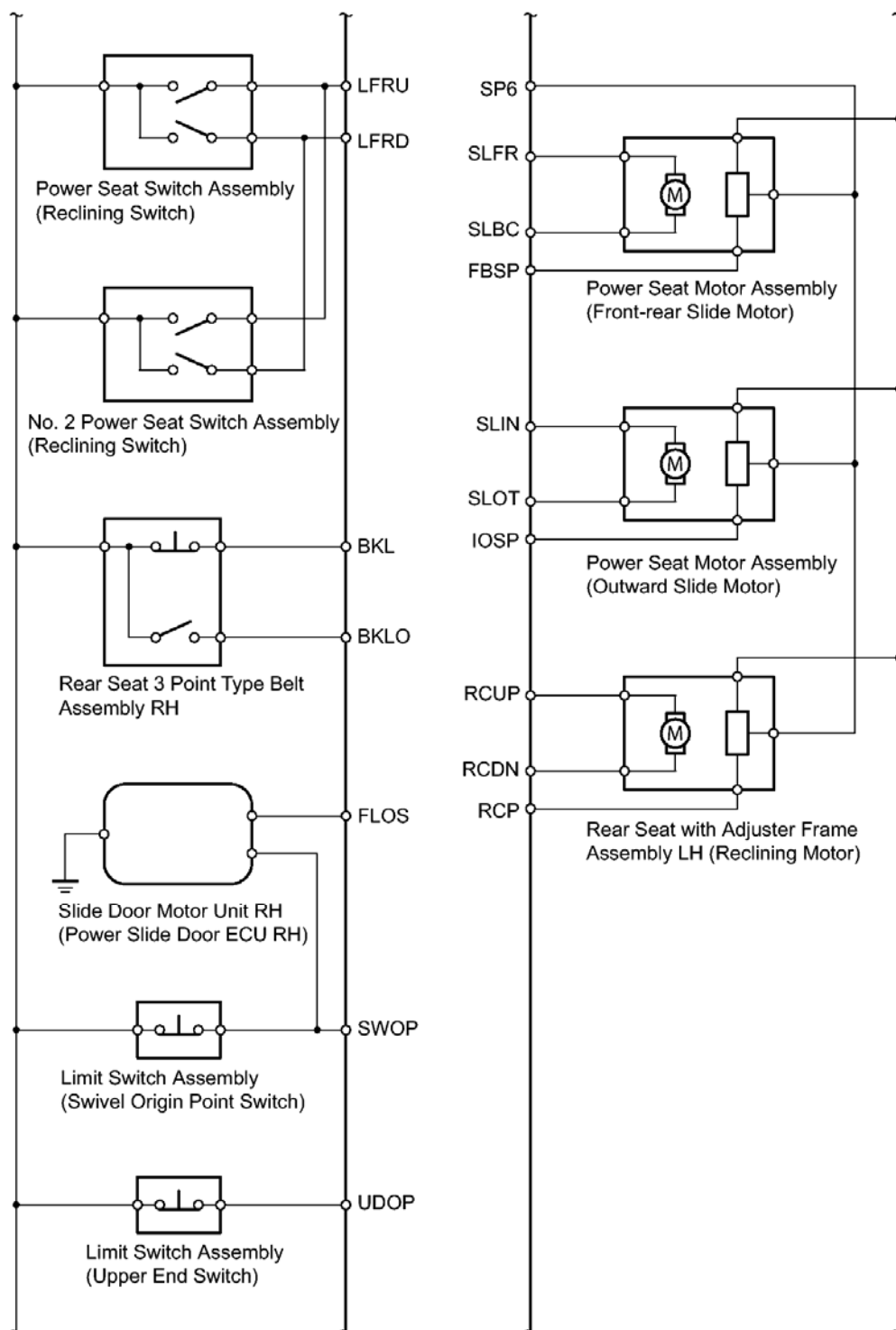


Fig. 5: Auto Access Seat System Diagram(2 Of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

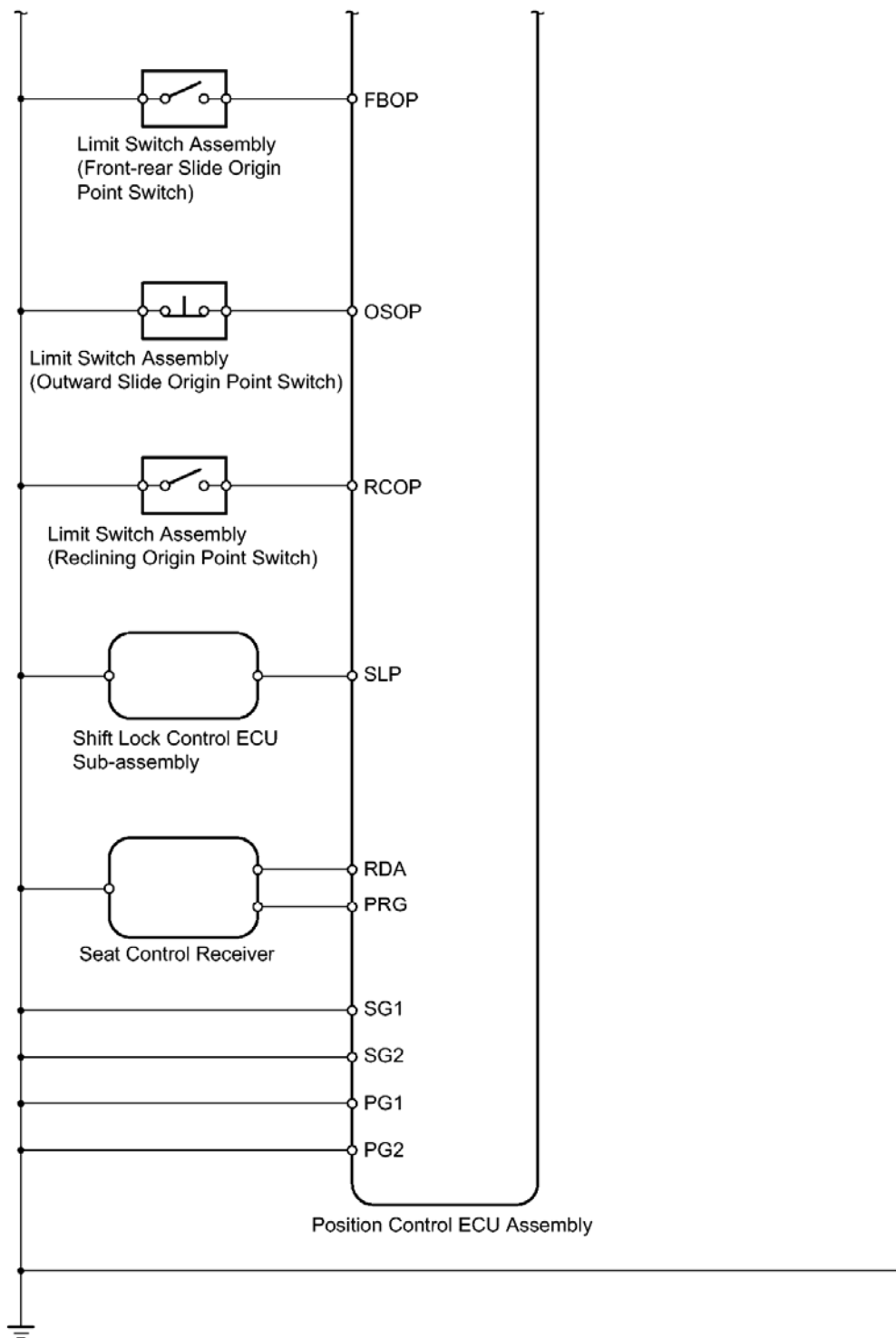


Fig. 6: Auto Access Seat System Diagram(3 Of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DESCRIPTION

SYSTEM DESCRIPTION

1. MODE FUNCTION

- a. Each control mode and function

Mode	Function
Service Operation Mode	Output / clearing of diagnostic codes stored in the RAM of the position control ECU assembly, Initializing of auto access seat position information stored in the EEPROM.
Independent Operation Mode	When the auto access seat information stored in the EEPROM has been lost, allows configuration of position information for all origin points, and records the position information to the EEPROM.
Access Seat	When the power slide door RH is fully open, the shift position is in the P position, and the seat belt is not fastened, enables seat ingress and

Mode	egress operation when the ingress switch or egress switch of the power seat switch assembly or seat control transmitter is pressed.
Power Seat Mode	• Enables slide operation when the front slide switch or rear slide switch of the power seat switch assembly is pressed. • Enables reclining operation when the up switch or down switch of the power seat switch assembly is pressed.

2. DIAGNOSTIC FUNCTION

a. Diagnostic function using buzzer.

1. By activating diagnostic code output from service operation mode, each motor and switch can be checked for malfunctions. Refer to **DIAGNOSIS SYSTEM**.

3. BUZZER FUNCTION

a. Buzzer (A):

Buzzer (A):

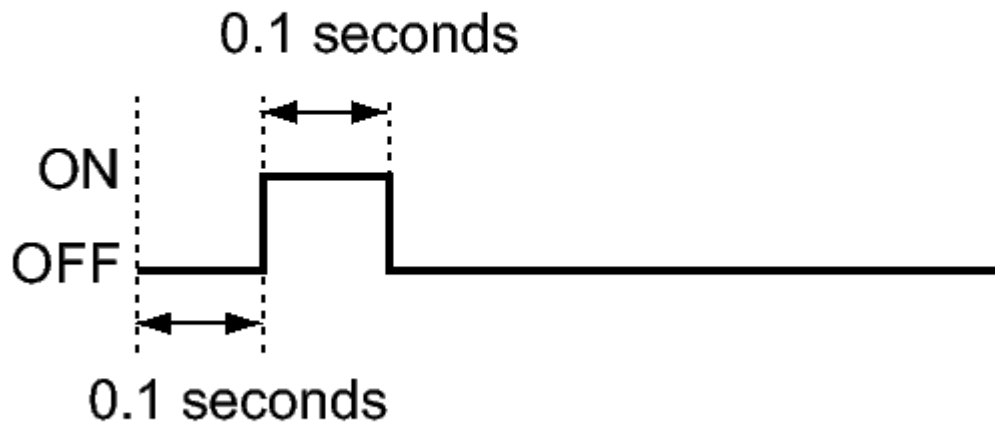


Fig. 7: Buzzer (A): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- Buzzer sounds once for 0.1 seconds.
 - Buzzer is off for 0.1 seconds, and then sounds.
1. The buzzer sounds when entering service operation mode.
- b. Buzzer (B):

Buzzer (B):

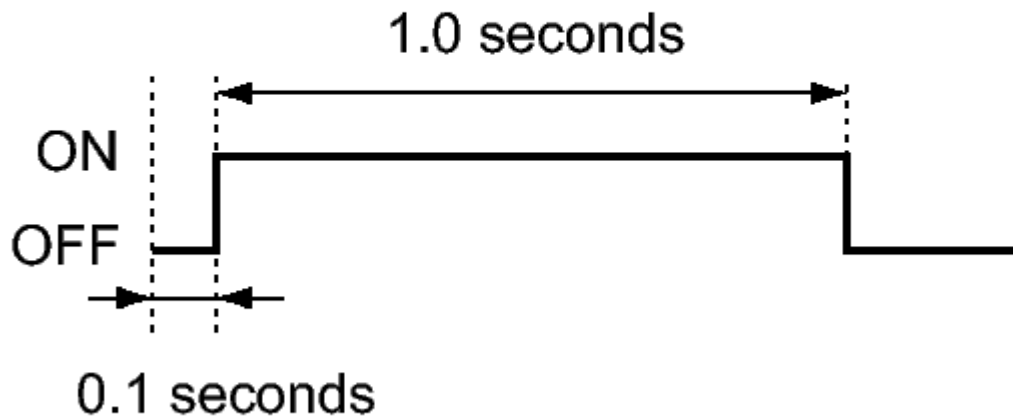


Fig. 8: Buzzer (B): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- Buzzer sounds once for 1.0 seconds.
 - Buzzer is off for 0.1 seconds, and then sounds.
1. Buzzer sounds when diagnostic code output is complete (Service operation mode).
 2. Buzzer sounds when diagnostic code has been cleared (Service operation mode).
 3. Buzzer sounds when auto access seat position information has been initialized (Service operation mode).
- c. Buzzer (C):

Buzzer (C):

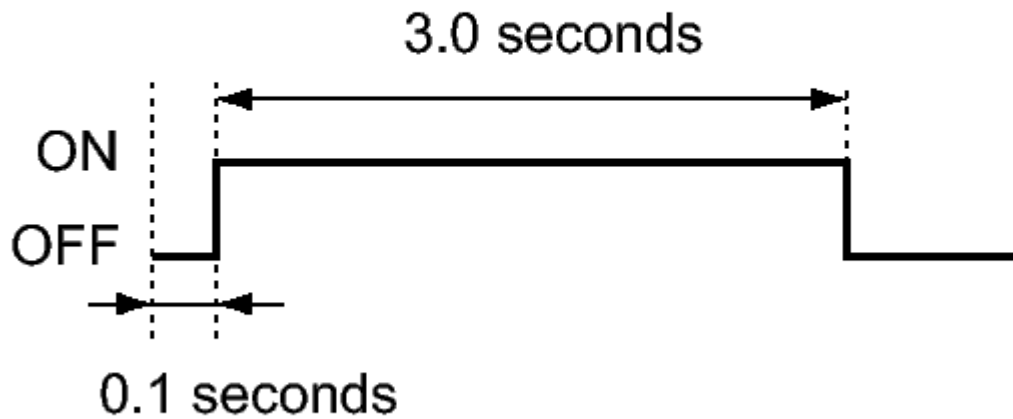


Fig. 9: Buzzer (C): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- Buzzer sounds once for 3.0 seconds.
 - Buzzer is off for 0.1 seconds, and then sounds.
1. Buzzer sounds when auto access seat malfunction is detected.
- d. Buzzer (D):

Buzzer (D):



Fig. 10: Buzzer (D): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- Buzzer sounds continuously.
 - Buzzer is off for 0.1 seconds, and then sounds.
1. Buzzer sounds during access seat mode or independent operation mode if the ignition switch is ON and the shift position is in a position other than P.
 2. Buzzer sounds during access seat mode if the power slide door RH is in a position other than fully open during ingress operation.
- e. Buzzer (E):

Buzzer (E):

(Switch)

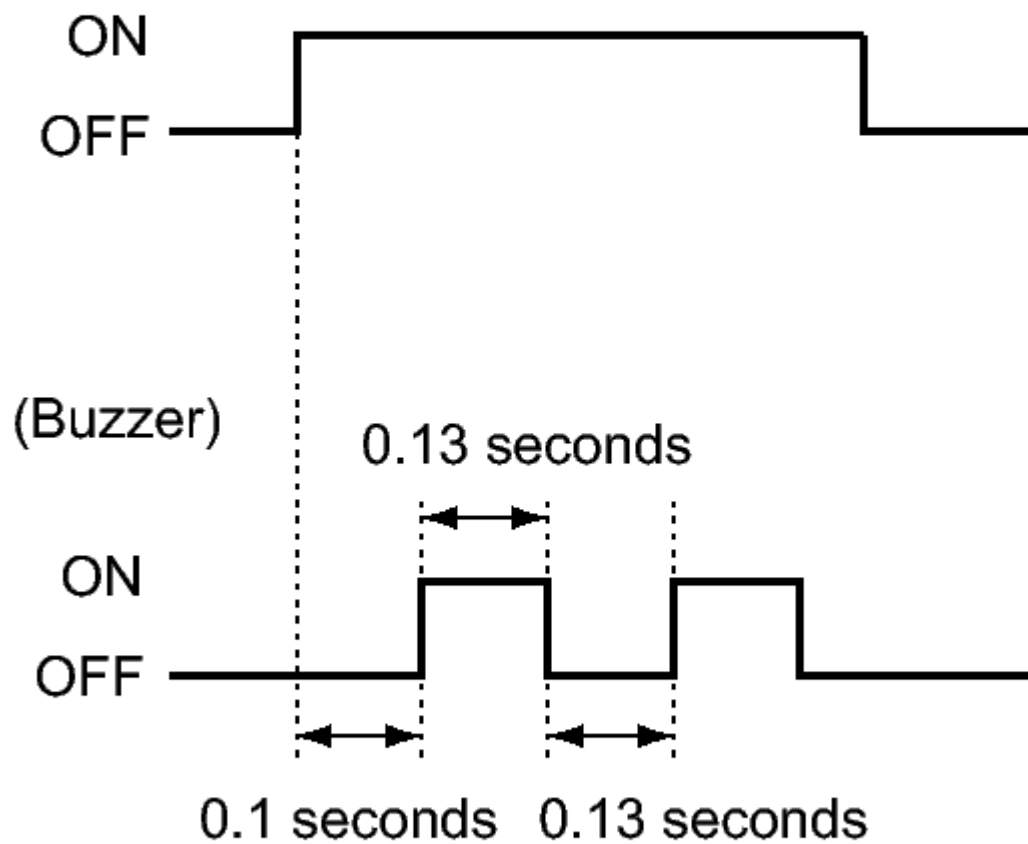


Fig. 11: Buzzer (E): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- Buzzer sounds for 0.13 seconds, then is off for 0.13 seconds, for 2 cycles.
 - Buzzer is off for 0.1 seconds, and then sounds.
1. Buzzer sounds if the switch is turned ON while the operation is prohibited.
 2. Buzzer sounds if the switch is turned ON for a direction in which operation is prohibited.
- f. Buzzer (F):

Buzzer (F):

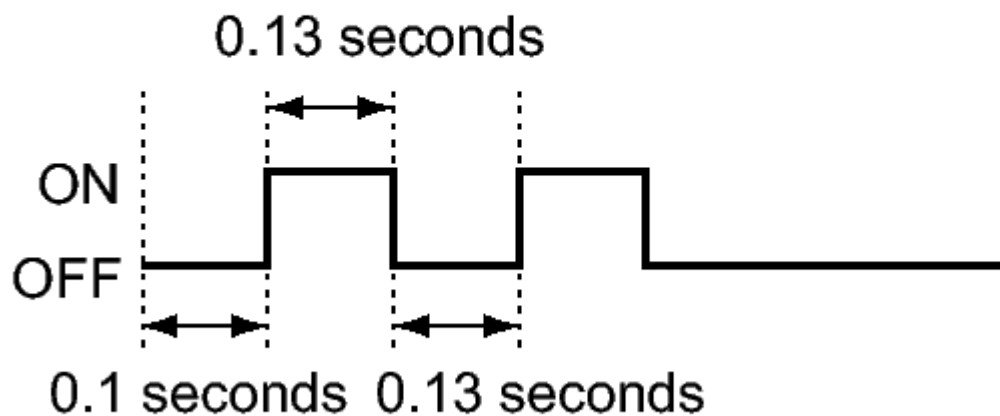


Fig. 12: Buzzer (F): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- Buzzer sounds for 0.13 seconds, then is off for 0.13 seconds, for 2 cycles.
 - Buzzer is off for 0.1 seconds, and then sounds.
1. If an excessive load is applied to the auto access seat during operation, the auto access seat reverses operation and the buzzer sounds simultaneously.
- g. Buzzer (G):

Buzzer (G):

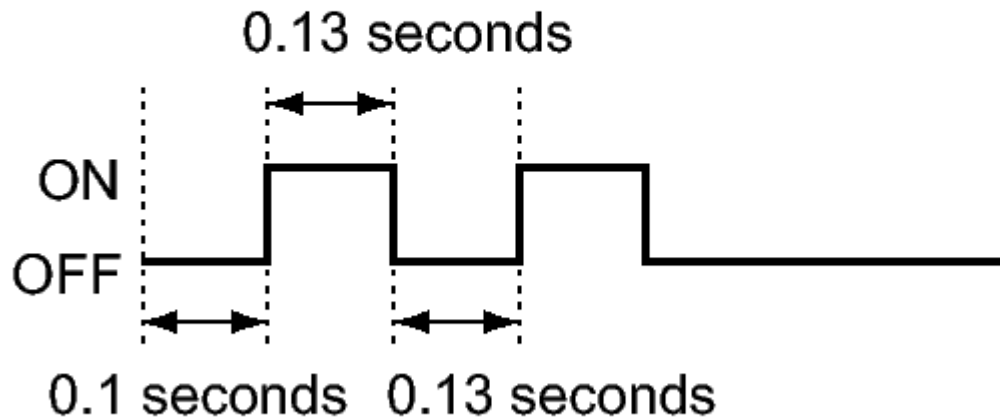


Fig. 13: Buzzer (G): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- Buzzer sounds for 0.13 seconds, then is off for 0.13 seconds, for 2 cycles.
 - Buzzer is off for 0.1 seconds, and then sounds.
1. When the ingress switch or the egress switch of the seat control transmitter or No. 2 power seat switch assembly is pressed while the seat belt is fastened, the buzzer sounds.
 2. While the access seat mode is operating or is halted, and the power slide door RH is not in the fully open position, the buzzer sounds.
 3. While independent operation mode is operating or is halted, and the power slide door RH is not in the fully open position, the buzzer sounds.
 4. While the access seat mode is operating or is halted, and the tongue plate is inserted into the rear seat 3 point type belt assembly RH, the buzzer sounds.
 5. While independent operation mode is operating or is halted, and the tongue plate is inserted into the rear seat 3 point type belt assembly RH, the buzzer sounds.

h. Buzzer (H):

Buzzer (H):

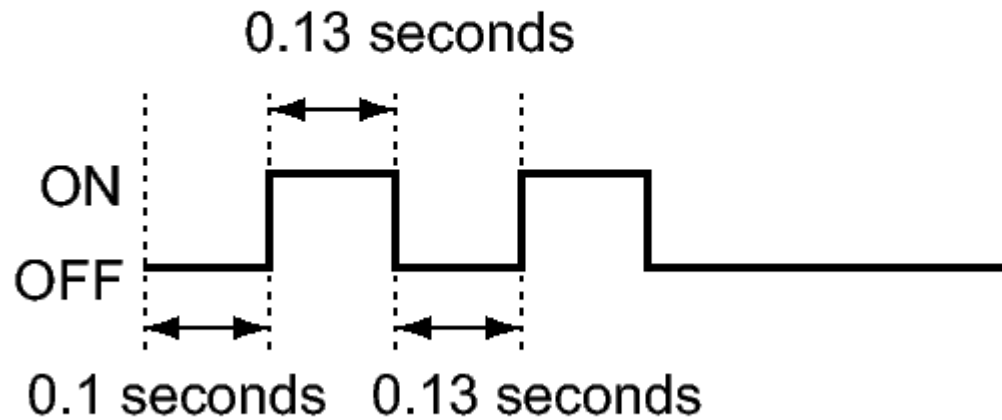


Fig. 14: Buzzer (H): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- Buzzer sounds for 0.13 seconds, then is off for 0.13 seconds, for 2 cycles.
 - Buzzer is off for 0.1 seconds, and then sounds.
1. While the access seat mode is operating, and the integration pulse count differs from the standard pulse by 160 edges or more, the buzzer sounds.
- i. Buzzer (I)

Buzzer (I):

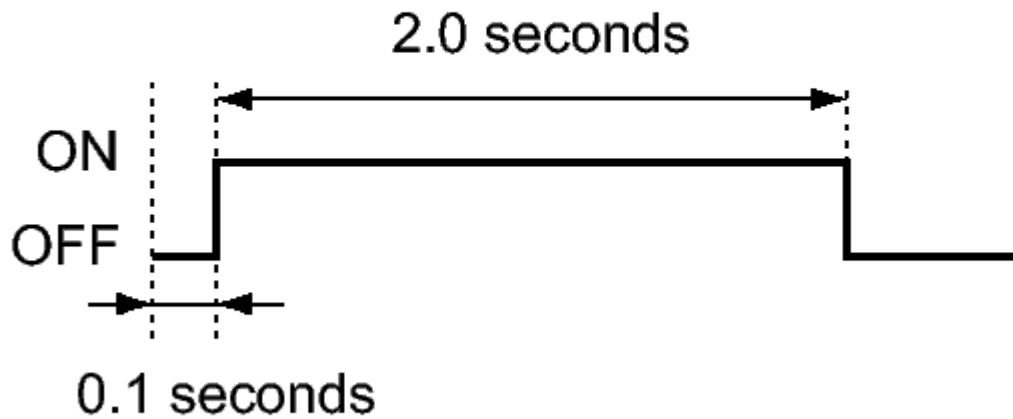


Fig. 15: Buzzer (I): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- Buzzer sounds once for 2.0 seconds.
 - Buzzer is off for 0.1 seconds, and then sounds.
1. Buzzer sounds when calibration for all auto access seat origin points is completed (Independent operation mode).
- j. Buzzer (J)

Buzzer (J):

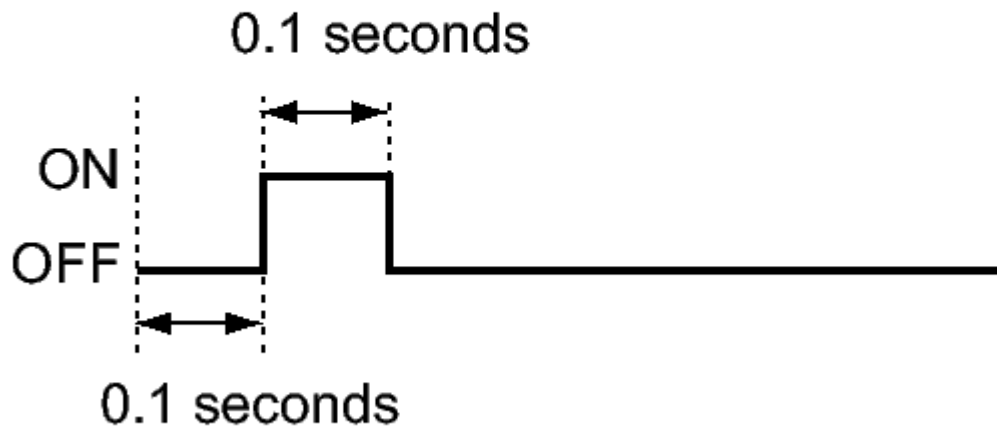


Fig. 16: Buzzer (J): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- Buzzer sounds once for 0.1 seconds.
 - Buzzer is off for 0.1 seconds, and then sounds.
1. Buzzer sounds when calibration of origin points for each operation of the auto access seat is completed (Independent operation mode).
- k. Buzzer (K)

Buzzer (K):

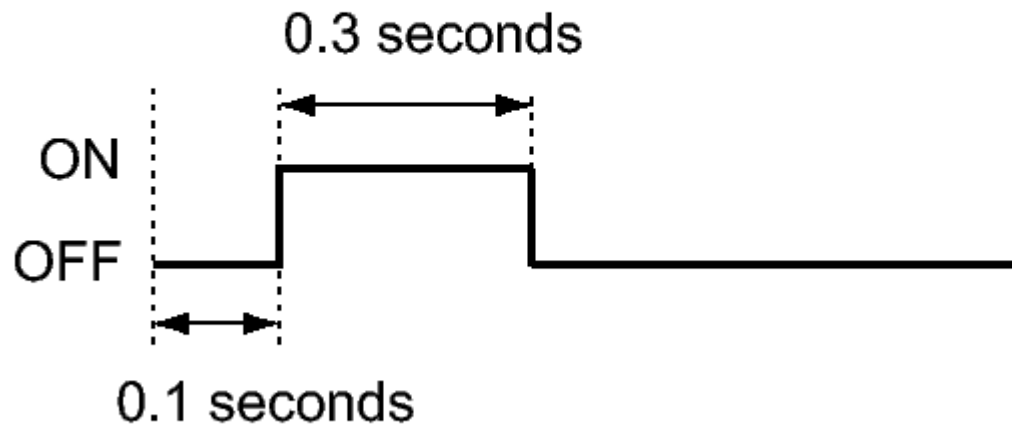


Fig. 17: Buzzer (K): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- Buzzer sounds once for 0.3 seconds.
 - Buzzer is off for 0.1 seconds, and then sounds.
1. Buzzer sounds in access seat mode when auto access seat ingress is complete.
 2. Buzzer sounds in power seat mode when power seat switch assembly (ingress switch) is pressed.
1. Buzzer (L):

Buzzer (L):

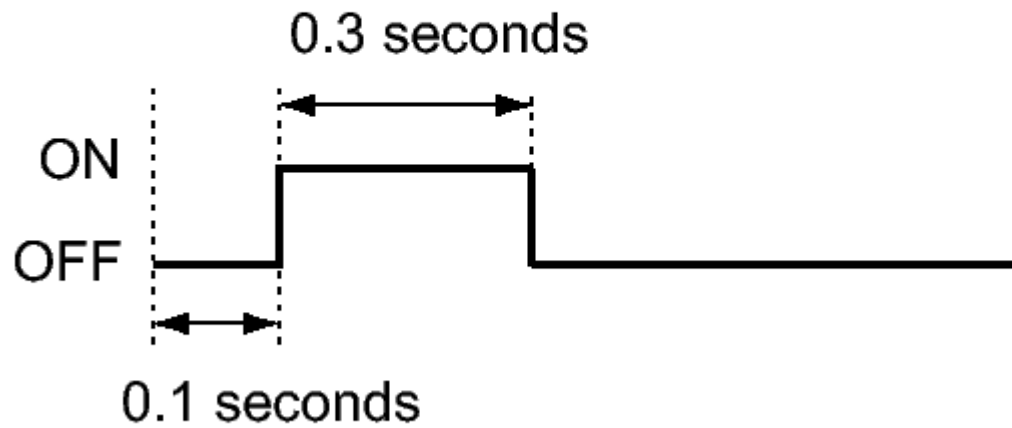


Fig. 18: Buzzer (L): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- Buzzer sounds once for 0.3 seconds.
 - Buzzer is off for 0.1 seconds, and then sounds.
1. Buzzer sounds when auto access seat ingress or egress operation begins.
- m. Buzzer (M):

Buzzer (M):

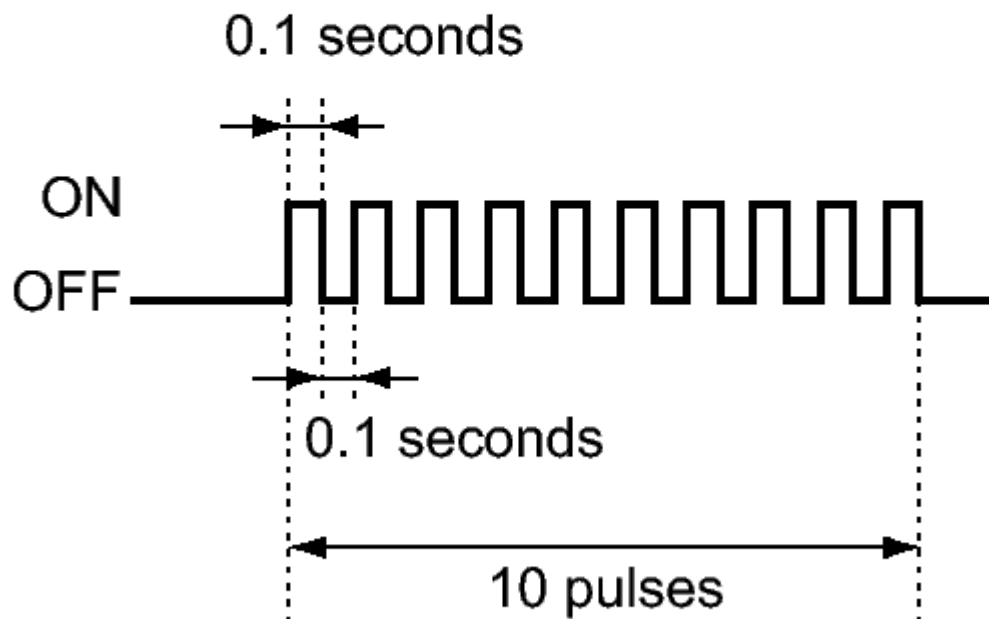


Fig. 19: Buzzer (M): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Buzzer sounds during diagnostic code output (Service operation mode).

HINT:

Illustration shows normal code output.

HOW TO PROCEED WITH TROUBLESHOOTING

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

Use these procedures to troubleshoot the auto access seat system.

1. VEHICLE BROUGHT TO WORKSHOP

NEXT: Go to next step

2. CUSTOMER PROBLEM ANALYSIS

- In troubleshooting, confirm that the problem symptoms have been accurately identified. Preconceptions should be discarded in order to make an accurate judgment. To clearly understand what the problem symptoms are, it is extremely important to ask the customer about the problem and the conditions at the time the malfunction occurred.
- Gather as much information as possible for reference. Past problems that seem unrelated may also help in some cases.
- The following 5 items are important points in the problem analysis:

What	Vehicle model, system name
When	Date, time, occurrence frequency
Where	Road conditions
Under what conditions?	Driving conditions, weather conditions
How did it happen?	Problem symptoms

NEXT: Go to next step

3. PRE-CHECK

- a. Measure the battery voltage.

Standard voltage

11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to the next step.

- b. Check the fuses and relays.
- c. Check the connector connections and terminals to make sure that there are no abnormalities such as loose connections, deformation, etc.

NEXT: Go to next step

4. CHECK FOR DTC

- a. Confirm diagnostic codes using service operation mode. Refer to **DIAGNOSIS SYSTEM**.

RESULT

Result	Proceed to
Normal Code Output	A
Trouble Code Output	B

B --> GO TO DIAGNOSTIC TROUBLE CODE CHART. Refer to DIAGNOSTIC TROUBLE CODE CHART

A: Go to next step

5. POSITION INFORMATION INITIALIZATION AND CALIBRATION

- a. In service operation mode or independent operation mode, perform initialization of auto access seat position information and calibration of limit switch assembly. Refer to **INITIALIZATION**.

RESULT

Result	Proceed to
Does not operate correctly	A
Operates correctly	B

B --> END

A: Go to next step

6. PROBLEM SYMPTOMS TABLE

- a. Refer to **PROBLEM SYMPTOMS TABLE**.

RESULT

Result	Proceed to
Fault is not listed in	

problem symptoms table	A
Fault is listed in problem symptoms table	B

B --> Go to step 8

A: Go to next step

7. OVERALL ANALYSIS AND TROUBLESHOOTING

- a. Operation Check. Refer to **OPERATION CHECK**
- b. Terminals of ECU. Refer to **TERMINALS OF ECU**

NEXT: Go to next step

8. REPAIR OR REPLACE

NEXT: Go to next step

9. CONFIRMATION TEST

NEXT --> END

OPERATION CHECK

OPERATION CHECK

1. CHECK AUTO ACCESS SEAT OPERATION (OPERATION START)

- a. Fully open the power slide door RH, move the shift position to the P position, and unfasten the seat belt.

HINT:

The auto access seat will only operate when the power slide door RH is fully open, the shift position is in the P position, and the seat belt is unfastened.

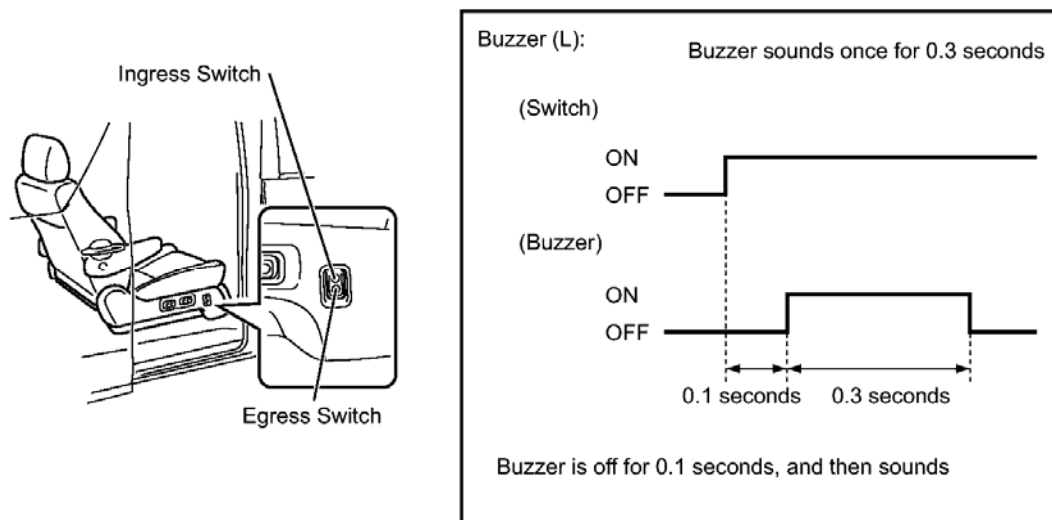


Fig. 20: Checking Auto Access Seat Operation (Operation Start) With Buzzer (L): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Operate the No. 2 power seat switch assembly (egress switch), and confirm that the buzzer sounds when the auto access seat begins egress operation.

OK

Operation Switch	Switch Condition	Specified Condition
No. 2 power seat switch assembly (egress switch)	Egress switch depressed	Buzzer (L) sounds

- c. Operate the No. 2 power seat switch assembly (ingress switch), and confirm that the buzzer sounds when the auto access seat begins ingress operation.

OK

Operation Switch	Switch Condition	Specified Condition
No. 2 power seat switch assembly (ingress)	Ingress switch depressed	Buzzer (L) sounds

switch)		
---------	--	--

2. CHECK AUTO ACCESS SEAT OPERATION (INGRESS COMPLETE)

- Fully open the power slide door RH, move the shift position to the P position, and unfasten the seat belt.

HINT:

The auto access seat will only operate when the power slide door RH is fully open, the shift position is in the P position, and the seat belt is unfastened.

- Operate the No. 2 power seat switch assembly (egress switch) to move the auto access seat to a position other than the origin point.

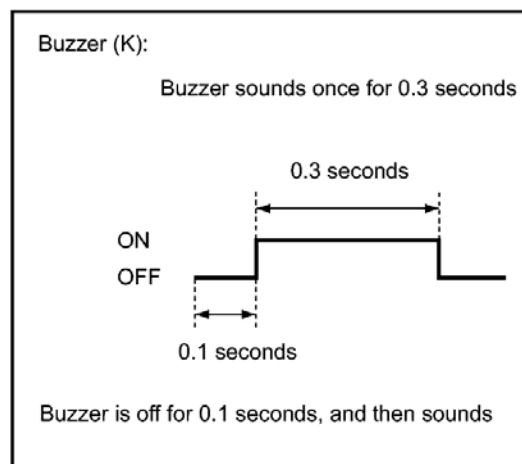
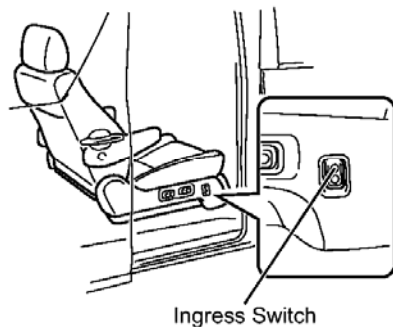


Fig. 21: Checking Auto Access Seat Operation (Ingress Complete) With Buzzer (K): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Operate the No. 2 power seat switch assembly (ingress switch), and confirm that the buzzer sounds when the auto access seat returns to the origin point.

OK

Operation Switch	Condition	Specified Condition
No. 2 power seat switch assembly (ingress)	Sounds when ingress complete	Buzzer (K) sounds

switch)		
---------	--	--

3. CHECK AUTO ACCESS SEAT OPERATION (OPERATING CONDITIONS NOT MET)

- Fully open the power slide door RH, move the shift position to the P position, and unfasten the seat belt.

HINT:

The auto access seat will only operate when the power slide door RH is fully open, the shift position is in the P position, and the seat belt is unfastened.

- Operate the No. 2 power seat switch assembly (egress switch) to move the auto access seat to a position other than the origin point.

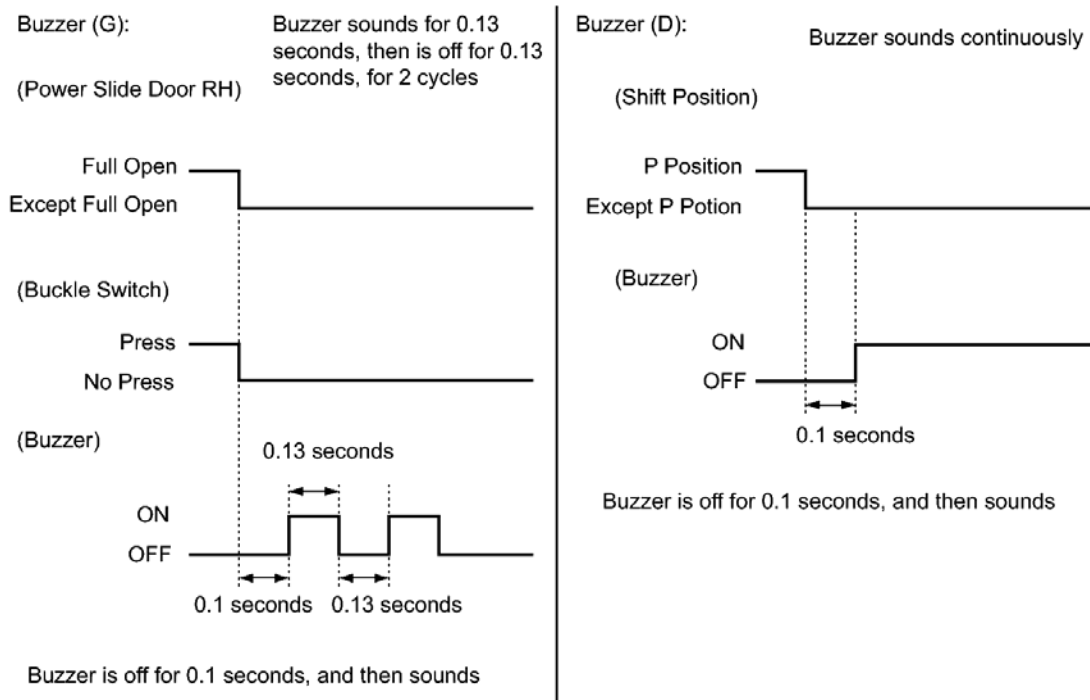


Fig. 22: Checking Auto Access Seat Operation (Operating Conditions Not Met) With Buzzer (G): & (D): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Confirm that the buzzer sounds when the power slide door is moved to a position other than the fully open position.

OK

Communication ECU	Condition	Specified Condition

Power slide door ECU RH	Power slide door is moved to a position other than fully open when the auto access seat is in a position other than the origin point	Buzzer (G) sounds
----------------------------	--	-------------------------

- d. Confirm that the buzzer sounds when the seat belt is fastened.

OK

Operation Switch	Condition	Specified Condition
Rear seat 3 point type belt assembly RH	Seat belt is fastened with the auto access seat at a position other than the origin point	Buzzer (G) sounds

- e. Confirm that the buzzer sounds while the ignition switch is ON and the shift position is in a position other than P.

OK

Operation Switch	Condition	Specified Condition
Park/neutral position	Ignition switch is ON and shift position other than P while	Buzzer

switch assembly	auto access seat at a position other than the origin point	(D) sounds
--------------------	--	---------------

4. CHECK AUTO ACCESS SEAT OPERATION (EXCESSIVE LOAD REVERSE OPERATION)

- Operate the power seat switch assembly (front-rear slide switch) or the No. 2 power seat switch assembly (front-rear slide switch) to activate the auto access seat.

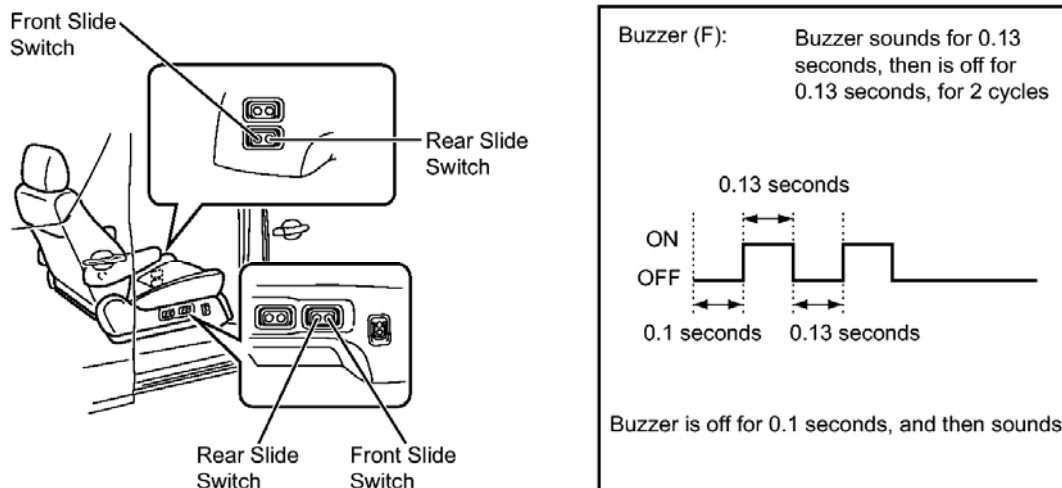


Fig. 23: Checking Auto Access Seat Operation (Excessive Load Reverse Operation) With Buzzer (F): Function Graph

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Confirm that applying excessive load during auto access seat operation causes the auto access seat to reverse operation while the buzzer sounds.

OK

Operation Switch	Condition	Specified Condition
Power seat switch assembly (front slide switch)	Load applied while sliding towards front	Reverses direction to slide towards rear, buzzer (F) sounds

Power seat switch assembly (rear slide switch)	Load applied while sliding towards rear	Reverses direction to slide towards front, buzzer (F) sounds
No. 2 power seat switch assembly (front slide switch)	Load applied while sliding towards front	Reverses direction to slide towards rear, buzzer (F) sounds
No. 2 power seat switch assembly (rear slide switch)	Load applied while sliding towards rear	Reverses direction to slide towards front, buzzer (F) sounds

5. CHECK AUTO ACCESS SEAT OPERATION (ACCESS SEAT MODE)

- a. Fully open the power slide door RH, move the shift position to the P position, and unfasten the seat belt.

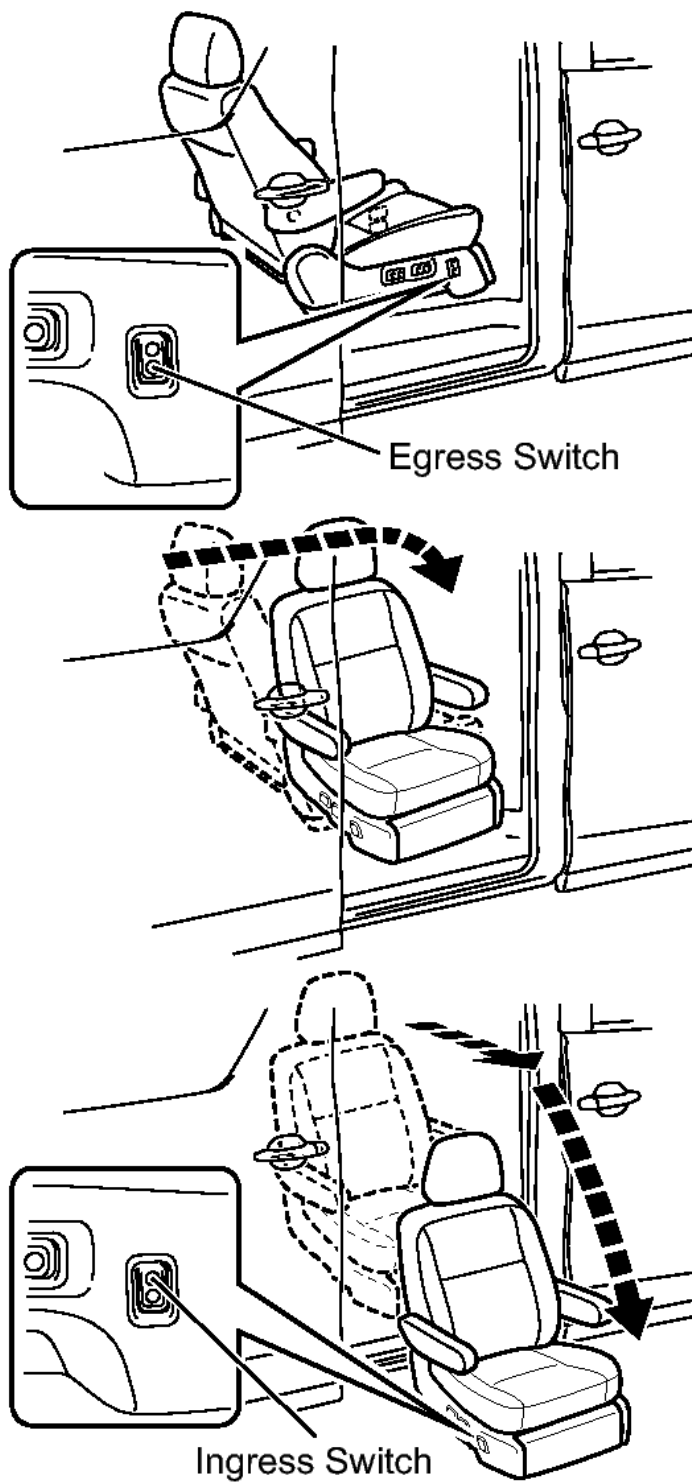


Fig. 24: Checking Auto Access Seat Operation (Access Seat Mode)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

The auto access seat will only operate when the power slide door RH is fully open, the shift position is in the P position, and the seat belt is unfastened.

- b. Operate the No. 2 power seat switch assembly (egress switch) to move the auto access seat from the origin point to the lower end, and measure the time it takes.

Standard

Operation Switch	Condition	Specified Condition (Reference)
No. 2 power seat switch assembly (egress switch)	Egress switch pressed with seat at origin point until seat reaches lower end	30 to 50 seconds

- c. Operate the No. 2 power seat switch assembly (ingress switch) to move the auto access seat from the lower end to the origin point, and measure the time it takes.

Standard

Operation Switch	Condition	Specified Condition (Reference)
No. 2 power seat switch assembly (ingress switch)	Ingress switch pressed with seat at lower end until seat reaches origin point	30 to 50 seconds

6. CHECK AUTO ACCESS SEAT OPERATION (POWER SEAT MODE)

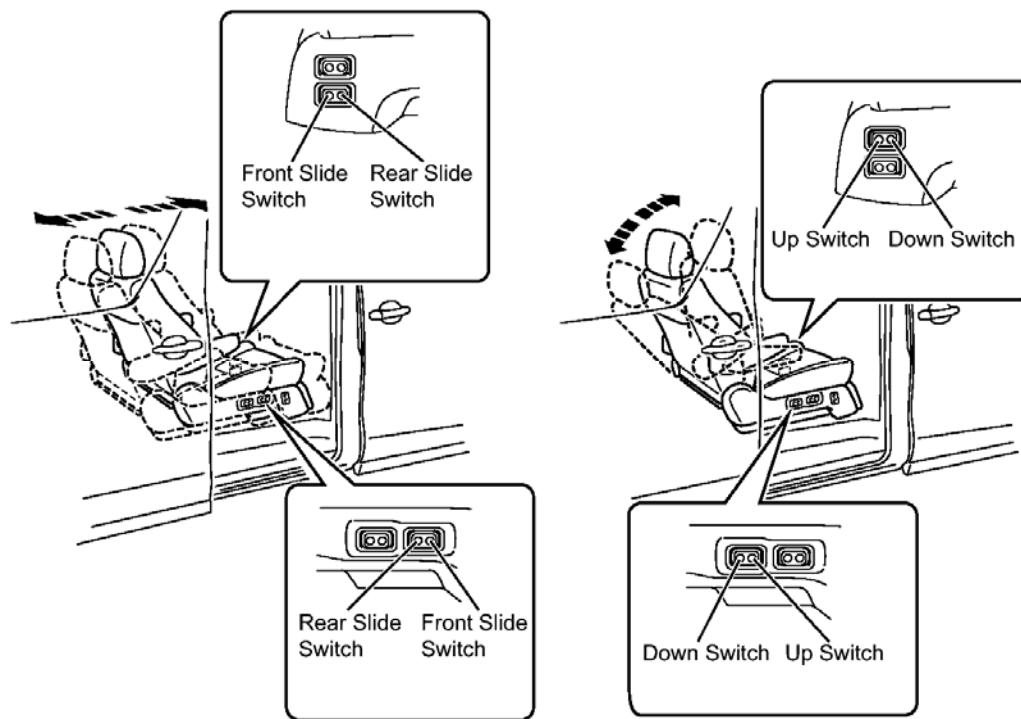


Fig. 25: Checking Auto Access Seat Operation (Power Seat Mode)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Operate the power seat switch assembly (front-rear slide switch) and the power seat switch assembly (reclining switch) and confirm that the auto access seat moves smoothly.

OK

Operation Switch	Switch Condition	Specified Condition
Power seat switch assembly (front slide switch)	Front slide switch pressed	Seat moves smoothly towards front
Power seat switch assembly (rear slide switch)	Rear slide switch pressed	Seat moves smoothly towards rear
No. 2 power seat switch assembly (front)	Front slide switch	Seat moves smoothly towards

slide switch)	pressed	front
No. 2 power seat switch assembly (rear slide switch)	Rear slide switch pressed	Seat moves smoothly towards rear
Power seat switch assembly (up switch)	Up switch pressed	Seatback reclines up smoothly
Power seat switch assembly (down switch)	Down switch pressed	Seatback reclines down smoothly
No. 2 power seat switch assembly (up switch)	Up switch pressed	Seatback reclines up smoothly
No. 2 power seat switch assembly (down switch)	Down switch pressed	Seatback reclines down smoothly

INITIALIZATION

INITIALIZATION

1. INITIALIZING POSITION INFORMATION

HINT:

Buzzer pattern. Refer to **SYSTEM DESCRIPTION**.

- a. Initialize position information.

NOTE:

Conduct initialization with the rear seat No. 2 assembly (Passenger-side third row seat) in the seating position. Otherwise, the seatback of the auto access seat may interfere with the rear seat No. 2

assembly and damage may result.

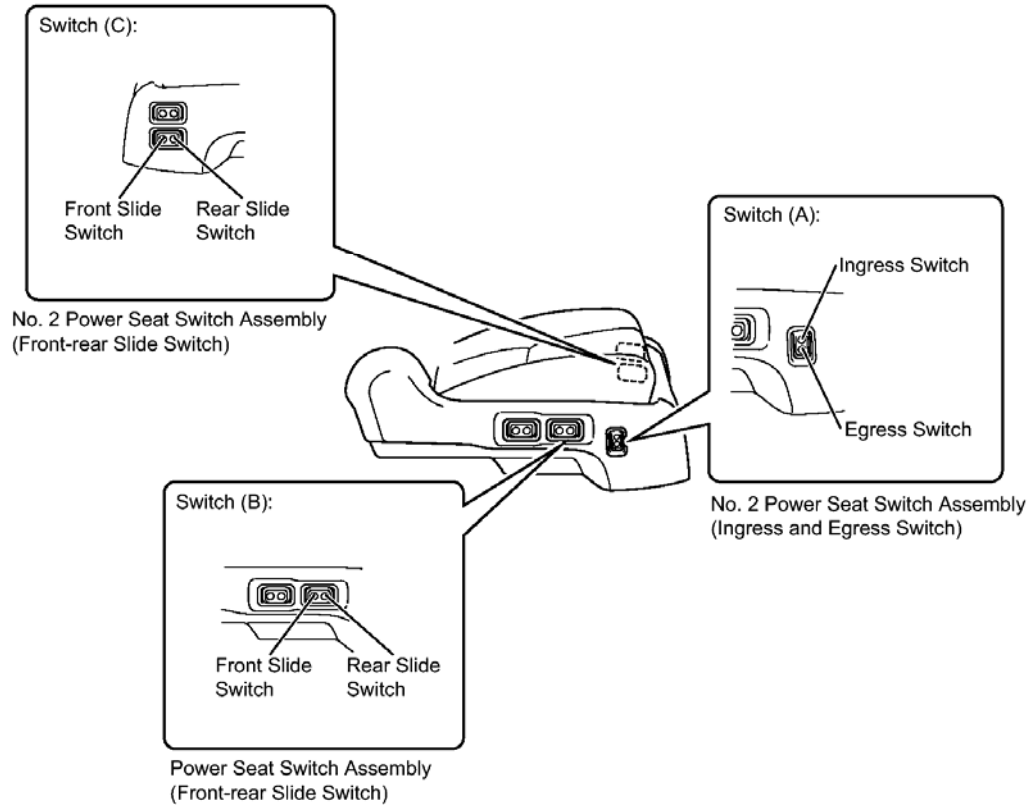


Fig. 26: Initializing Position Information
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Press and hold the ingress switch or egress switch of switch (A).
2. With switch (A) depressed, press and hold the front slide switch or rear slide switch of switch (B) or (C) for 10 seconds to enter service operation mode, and confirm that buzzer (A) sounds.
3. After buzzer (A) sounds, turn all operated switches off.
4. After turning all operated switches off, perform either Operation A or B below within 10 seconds.

Operation	Operation Switch
	Ingress switch or egress

A	switch of switch (A) ON 4 times --> front slide switch or rear slide switch of switch (B) or (C) ON 4 times
B	Front slide switch or rear slide switch of switch (B) or (C) ON 4 times -- > ingress switch or egress switch of switch (A) ON 4 times

5. When position information has been initialized, buzzer (B) sounds.
6. After buzzer (B) sounds, the system enters independent operation mode.

2. LIMIT SWITCH CALIBRATION

HINT:

- Buzzer pattern. Refer to **SYSTEM DESCRIPTION**.
- Calibration is performed in independent operation mode. For the requirements to enter independent operation mode, Refer to **DIAGNOSIS SYSTEM**.
- When performing calibration with the auto access seat in the ingress state, only origin point calibration for the swivel motor, front-rear slide motor, and reclining motor can be performed.

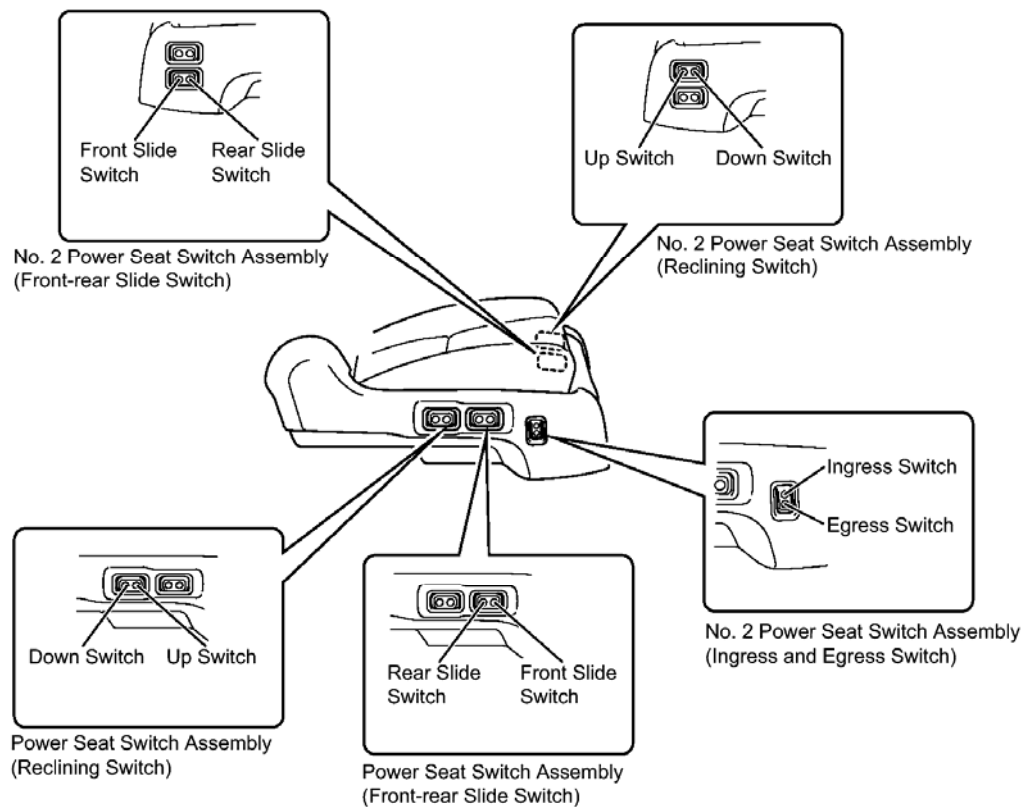


Fig. 27: Limit Switch Calibration

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Upper end and outward slide origin point calibration.
 1. Press and hold the ingress switch of the No. 2 power seat switch assembly (ingress and egress switch).
 2. Auto access seat moves in the following order: Up-down motor operates upward --> upper end limit switch ON detected, buzzer (J) sounds --> up-down motor operates downward --> up-down motor stops --> outward slide motor operates in the egress direction --> outward slide motor origin point limit switch ON detected --> outward slide motor stops --> up-down motor operates upward --> upper end limit switch ON detected, buzzer (J) sounds --> up-down motor stops.
- b. Swivel origin point calibration.

NOTE: Performing swivel origin point calibration from an egress state can cause the seat cushion to bump against the vehicle body, so slide the seat approximately 50 mm (2.0 in) rearward before performing calibration.

1. Press and hold the front slide switch of the power seat switch assembly (front-rear slide switch) or No. 2 power seat switch assembly (front-rear slide switch).
2. Auto access seat moves in the following order: Swivel motor operates in the ingress direction --> swivel origin point limit switch ON detected, buzzer (J) sounds --> swivel motor stops.

HINT:

While swivel motor origin point calibration is incomplete, simultaneously operating the No. 2 power seat switch assembly (egress switch) and power seat switch assembly (front slide switch) or simultaneously operating the No. 2 power seat switch assembly (egress switch) and No. 2 power seat switch assembly (front slide switch) will cause the auto access seat to egress to the point where independent operation mode begins.

c. Front-rear slide origin point calibration.

1. Press and hold the rear slide switch of the power seat switch assembly (rear slide switch) or No. 2 power seat switch assembly (rear slide switch).
2. Auto access seat moves in the following order: Rear slide operation --> front-rear slide limit switch ON detected, buzzer (J) sounds --> front-rear slide motor stops.

HINT:

While front-rear slide origin point calibration is incomplete, simultaneously operating the No. 2 power seat switch assembly (egress switch) and power seat switch assembly (rear slide switch) or simultaneously operating the No. 2 power seat switch assembly (egress switch) and No. 2 power seat switch assembly (rear slide switch) will cause the auto access seat to slide forward.

d. Reclining origin point calibration.

HINT:

Until the reclining origin point calibration is completed, only reclining down operations can be performed when the reclining limit switch is ON, and only reclining up operations can be performed when the reclining limit switch is OFF.

1. Press and hold the down switch of the power seat switch assembly (reclining switch) or No. 2 power seat switch assembly (reclining switch).
 2. Auto access seat moves in the following order: Reclining down operation --> reclining limit switch OFF detected --> reclining motor stops.
 3. Press and hold the up switch of the power seat switch assembly (reclining switch) or No. 2 power seat switch assembly (reclining switch).
 4. Auto access seat moves in the following order: Reclining up operation --> reclining limit switch ON detected, buzzer (J) sounds --> reclining motor stops.
- e. Buzzer (I) sounds when all auto access seat origin point calibrations are completed.

PROBLEM SYMPTOMS TABLE

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

AUTO ACCESS SEAT SYSTEM

Symptom	Suspected Area	See
Seat continuously reverses direction due to excessive load detected (when no excessive load is applied to mechanism, this is due to the pulse signal not being generated).	Power seat motor assembly (front-rear slide motor)	Refer to <u>INSPECTION</u>
	Rear seat with adjuster frame assembly LH (reclining motor)	Refer to <u>INSPECTION</u>
	Power seat motor assembly (swivel motor)	Refer to <u>INSPECTION</u>
	Power seat motor assembly (outward slide motor)	Refer to <u>INSPECTION</u>
	Access seat cylinder assembly (up-down motor)	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
No front slide operation, no rear slide operation.	Power seat switch assembly (front-rear slide switch)	Refer to <u>INSPECTION</u>
	No. 2 power seat switch assembly (front-rear slide switch)	Refer to <u>INSPECTION</u>
	No. 2 power seat switch assembly (ingress and egress switch)	Refer to <u>INSPECTION</u>
	Seat remote control switch set (seat control transmitter)	Refer to <u>REPLACEMENT</u>
	Power seat motor assembly (front-rear slide motor)	Refer to <u>INSPECTION</u>
	Limit switch assembly (front-rear slide origin point switch)	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU	Refer to <u>DISASSEMBLY</u>

	assembly	
No reclining operation.	Power seat switch assembly (reclining switch)	Refer to <u>INSPECTION</u>
	No. 2 power seat switch assembly (reclining switch)	Refer to <u>INSPECTION</u>
	No. 2 power seat switch assembly (ingress and egress switch)	Refer to <u>INSPECTION</u>
	Seat remote control switch set (seat control transmitter)	Refer to <u>REPLACEMENT</u>
	Rear seat with adjuster frame assembly LH (reclining motor)	Refer to <u>INSPECTION</u>
	Limit switch assembly (reclining origin point switch)	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
No swivel right operation, no swivel left operation.	No. 2 power seat switch assembly (ingress and egress switch)	Refer to <u>INSPECTION</u>
	Seat remote control switch set (seat control transmitter)	Refer to <u>REPLACEMENT</u>
	Slide door motor unit RH (power slide door ECU RH)	Refer to <u>TERMINALS OF ECU</u>
	Park/neutral position switch assembly	Refer to <u>INSPECTION</u>
	Rear seat 3 point type belt assembly RH	Refer to <u>INSPECTION</u>
	Power seat motor assembly (swivel motor)	Refer to <u>INSPECTION</u>
	Limit switch assembly (swivel origin point switch)	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
	No. 2 power seat switch assembly (ingress and egress switch)	Refer to <u>INSPECTION</u>
	Seat remote control switch set (seat control transmitter)	Refer to <u>REPLACEMENT</u>
	Slide door motor unit RH (power slide door ECU RH)	Refer to <u>TERMINALS OF ECU</u>

No outward slide operation, no inward slide operation.	Park/neutral position switch assembly	Refer to <u>INSPECTION</u>
	Rear seat 3 point type belt assembly RH	Refer to <u>INSPECTION</u>
	Power seat motor assembly (outward slide motor)	Refer to <u>INSPECTION</u>
	Limit switch assembly (outward slide origin point switch)	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
No move down (lower) operation, no move up (raise) operation.	No. 2 power seat switch assembly (ingress and egress switch)	Refer to <u>INSPECTION</u>
	Seat remote control switch set (seat control transmitter)	Refer to <u>REPLACEMENT</u>
	Slide door motor unit RH (power slide door ECU RH)	Refer to <u>TERMINALS OF ECU</u>
	Park/neutral position switch assembly	Refer to <u>INSPECTION</u>
	Rear seat 3 point type belt assembly RH	Refer to <u>INSPECTION</u>
	Power lift motor relay (raise relay)	Refer to <u>INSPECTION</u>
	Power lift motor relay (lower relay)	Refer to <u>INSPECTION</u>
	Access seat cylinder assembly (up-down motor)	Refer to <u>INSPECTION</u>
	Limit switch assembly (upper end switch)	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
Auto access seat egress operation is possible without the power slide door RH being in the fully open position.	Slide door motor unit RH (power slide door ECU RH)	Refer to <u>TERMINALS OF ECU</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
Slide door is fully open, but the buzzer sounds during ingress operation.	Slide door motor unit RH (power slide door ECU RH)	Refer to <u>TERMINALS OF ECU</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>

Slide door is fully open, but egress operation is not possible.	Slide door motor unit RH (power slide door ECU RH)	Refer to <u>TERMINALS OF ECU</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
Slide door is not fully open, but the buzzer does not sound during ingress operation.	Slide door motor unit RH (power slide door ECU RH)	Refer to <u>TERMINALS OF ECU</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
While the auto access seat is operating, the power slide door RH operates electrically.	Slide door motor unit RH (power slide door ECU RH)	Refer to <u>TERMINALS OF ECU</u>
	Limit switch assembly (swivel origin point switch)	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
Seat is at the origin point, but automatic operation is not possible.	Slide door motor unit RH (power slide door ECU RH)	Refer to <u>TERMINALS OF ECU</u>
	Limit switch assembly (swivel origin point switch)	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
Auto access seat ingress and egress operations are possible with the shift position in a position other than P.	Park/neutral position switch assembly	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
Shift position is P, but seat does not operate.	Park/neutral position switch assembly	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
Shifting operations are possible while the auto access seat is operating.	Shift lock control ECU sub-assembly	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
Seat is in the origin point, but shift operation is not possible.	Shift lock control ECU sub-assembly	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>

Auto access seat egress operation is possible while the seat belt is fastened.	Rear seat 3 point type belt assembly RH	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
Seat belt is not fastened but egress operation is not possible.	Rear seat 3 point type belt assembly RH	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>
Seat belt is not fastened, but ingress start buzzer is Buzzer E instead of Buzzer L.	Rear seat 3 point type belt assembly RH	Refer to <u>INSPECTION</u>
	Harness or connector	-
	Position control ECU assembly	Refer to <u>DISASSEMBLY</u>

TERMINALS OF ECU

TERMINALS OF ECU

1. CHECK POSITION CONTROL ECU ASSEMBLY

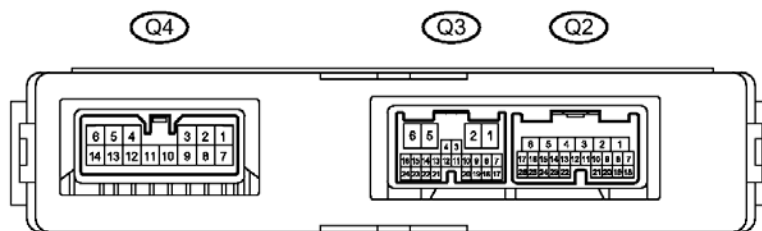


Fig. 28: Position Control ECU Assembly Connector Terminal Identification
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Measure the voltage and resistance of the connector.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
Q2-1 (+SB) - Q4-2 (PG1)	W - W- B	Battery (power supply)	Always	11 to 14 V
Q2-2 (IG) - Q4-2 (PG1)	L - W- B	IG signal	Ignition switch off --> ON	Below 1 V --> 11 to 14 V

Q2-3 (SP12) - Q4-2 (PG1)	G - W- B	Sensor power supply (+12 V)	• During access seat cylinder assembly (up-down motor) operation • During power seat motor assembly (swivel motor) operation	11 to 14 V
Q2-4 (SG1) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms
Q2-5 (LFDN) - Q4-2 (PG1)	B - W- B	Up-down motor (down) signal	No. 2 power seat switch assembly (egress switch) off --> on	Below 1 V --> 11 to 14 V
Q2-6 (SP6) - Q4-2 (PG1)	W - W- B	Sensor power supply (+6 V)	• During power seat motor assembly (front- rear slide motor) operation • During rear seat with adjuster frame assembly LH (reclining motor) operation • During power	5.5 to 6.5 V

			seat motor assembly (outward slide motor) operation	
Q2-10 (UDP) - Q4-2 (PG1)	L - W- B	Up-down pulse signal	No. 2 power seat switch assembly (ingress or egress switch) on (During seat up-down operation)	Pulse generation
Q2-11 (LFE) - Q4-2 (PG1)	BR - W-B	Egress switch signal	No. 2 power seat switch assembly (egress switch) off --> on	11 to 14 V --> Below 1 V
Q2-12 (SLP) - Body ground	B - Body ground	Shift lock release signal	During auto access seat ingress operation, brake pedal released --> depressed	Below 1 V --> 11 to 14 V
Q2-14 (LFIN) - Q4-2 (PG1)	Y- W- B	Ingress switch signal	No. 2 power seat switch assembly (ingress switch) off --> on	11 to 14 V --> Below 1 V
Q2-15 (LFRU) - Q4-2 (PG1)	GR - W-B	Up switch signal	Power seat switch assembly (up switch) off --> on	11 to 14 V --> Below 1 V
			No. 2 power seat switch assembly (up switch) off --> on	11 to 14 V --> Below 1 V
Q2-16			Power seat switch assembly (down switch)	11 to 14 V --> Below 1 V

(LFRD) - Q4-2 (PG1)	W - W-B	Down switch signal	off --> on No. 2 power seat switch assembly (down switch) off --> on	11 to 14 V --> Below 1 V
Q2-17 (LFFR) - Q4-2 (PG1)	B-W - W-B	Front slide switch signal	Power seat switch assembly (front slide switch) off --> on No. 2 power seat switch assembly (front slide switch) off --> on	11 to 14 V --> Below 1 V 11 to 14 V --> Below 1 V
Q2-18 (INSP) - Q4-2 (PG1)	L-W - W-B	Shift P position switch signal	Ignition switch ON Shift lever P position --> except P position	11 to 14 V --> Below 1 V
Q2-19 (IOSP) - Q4-2 (PG1)	G - W-B	Outward slide pulse signal	No. 2 power seat switch assembly (ingress or egress switch) on (During seat inward/outward slide operation)	Pulse generation
Q2-21 (PRG) - Q4-2 (PG1)	GR - W-B	BERKES send signal	Seat control transmitter (egress switch) off --> on	11 to 14 V --> Pulse generation
Q2-24 (FBOP) - Q4-2 (PG1)	R-B - W-B	Front-rear slide origin point limit switch signal	Auto access seat front-rear slide from other than origin point --> origin point	11 to 14 V --> Below 1 V
Q2-25 (SWOP) - Q4-2 (PG1)	R - W-B	Swivel origin point limit switch signal	Auto access seat swivel from other than origin point --> origin point	Below 1 V --> 11 to 14 V

Q2-26 (LFBC) - Q4-2 (PG1)	G - W- B	Rear slide switch signal	Power seat switch assembly (rear slide switch) off --> on	11 to 14 V --> Below 1 V
			No. 2 power seat switch assembly (rear slide switch) off --> on	11 to 14 V --> Below 1 V
Q3-2 (RCUP) - Q4-2 (PG1)	R - W- B	Reclining motor (up) signal	Power seat switch assembly (up switch) off --> on	Below 1 V --> 11 to 14 V
			No. 2 power seat switch assembly (up switch) off --> on	Below 1 V --> 11 to 14 V
Q3-5 (RCDN) - Q4-2 (PG1)	R-B - W-B	Reclining motor (down) signal	Power seat switch assembly (down switch) off --> on	Below 1 V --> 11 to 14 V
			No. 2 power seat switch assembly (down switch) off --> on	Below 1 V --> 11 to 14 V
Q3-6 (SG2) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms
Q3-8 (RCOP) - Q4-2 (PG1)	R - W- B	Reclining origin point limit switch signal	Auto access seat reclining from other than origin point (reclining up or reclining down) --> origin point	11 to 14 V --> Below 1 V
Q3-9 (BKL) - Q4-2 (PG1)	L-W - W-B	Seat belt condition signal	Rear No. 1 seat RH seat belt unfastened --> fastened	Below 1 V --> 11 to 14 V
		Outward	Auto access	

Q3-11 (OSOP) - Q4-2 (PG1)	B-W - W-B	slide origin point limit switch signal	seat outward slide from other than origin point --> origin point	Below 1 V --> 11 to 14 V
Q3-14 (RCP) - Q4-2 (PG1)	Y - W- B	Reclining pulse signal	No. 2 power seat switch assembly (ingress or egress switch) on (During seat reclining operation)	Pulse generation
Q3-15 (LFUP) - Q4-2 (PG1)	L-B - W-B	Up-down motor (up) signal	No. 2 power seat switch assembly (ingress switch) off --> on	Below 1 V --> 11 to 14 V
Q3-16 (BKLO) - Q4-2 (PG1)	L - W- B	Seat belt condition signal	Rear No. 1 seat RH seat belt unfastened --> fastened	11 to 14 V --> Below 1 V
Q3-17 (FLOS) - Q4-2 (PG1)	R-B - W-B	Slide fully open signal	Power slide door RH from other than fully open --> fully open	11 to 14 V --> Below 1 V
Q3-19 (UDOP) - Q4-2 (PG1)	G - W- B	Upper end limit switch signal	Auto access seat other than upper end --> upper end	Below 1 V --> 11 to 14 V
Q3-21 (FBSP) - Q4-2 (PG1)	G - W- B	Front-rear slide pulse signal	No. 2 power seat switch assembly (ingress or egress switch) on (During seat front-rear slide operation)	Pulse generation
Q3-22 (TRNP) - Q4-2	L - W- B	Swivel pulse signal	No. 2 power seat switch assembly (ingress or egress switch) on	Pulse generation

(PG1)			(During seat swivel operation)	
Q4-1 (+PB1) - Q4-2 (PG1)	L - W-B	Battery (power supply)	Always	11 to 14 V
Q4-2 (PG1) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms
Q4-3 (SLBC) - Q4-2 (PG1)	L-R - W-B	Front-rear slide motor (rear) signal	Power seat switch assembly (rear slide switch) off --> on	Below 1 V --> 11 to 14 V
			No. 2 power seat switch assembly (rear slide switch) off --> on	Below 1 V --> 11 to 14 V
Q4-7 (+PB2) - Q4-2 (PG1)	L - W-B	Battery (power supply)	Always	11 to 14 V
Q4-8 (PG2) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms
Q4-9 (SLFR) - Q4-2 (PG1)	Y - W-B	Front-rear slide motor (front) signal	Power seat switch assembly (front slide switch) off --> on	Below 1 V --> 11 to 14 V
			No. 2 power seat switch assembly (front slide switch) off --> on	Below 1 V --> 11 to 14 V
Q4-10 (TRNO) - Q4-2 (PG1)	R-B - W-B	Swivel motor (egress) signal	No. 2 power seat switch assembly (egress switch) off --> on	Below 1 V --> 11 to 14 V
Q4-11 (TRNI) -	B - W-	Swivel motor	No. 2 power seat switch	Below 1

Q4-2 (PG1)	B	(ingress) signal	assembly (ingress switch) off --> on	V --> 11 to 14 V
Q4-12 (SLIN) - Q4-2 (PG1)	B-R - W-B	Outward slide motor (ingress) signal	No. 2 power seat switch assembly (ingress switch) off --> on	Below 1 V --> 11 to 14 V
Q4-13 (SLOT) - Q4-2 (PG1)	G - W- B	Slide-out motor (egress) signal	No. 2 power seat switch assembly (egress switch) off --> on	Below 1 V --> 11 to 14 V

DIAGNOSIS SYSTEM

DIAGNOSIS SYSTEM

1. SERVICE OPERATION MODE

HINT:

- Buzzer pattern. Refer to **SYSTEM DESCRIPTION**.
- Auto access seat position information is stored in EEPROM (Electrically Erasable Programmable Read Only Memory). Position information is initialized in service operation mode.
- Service operation mode allows diagnostic codes stored in the RAM of the position control ECU assembly to be output/cleared, and enables initialization of the auto access seat position information stored in EEPROM.

Memory	Operation
RAM	Output diagnostic codes
RAM	Clear diagnostic codes
EEPROM	Initialize auto access seat position information

- a. Service operation mode flowchart.

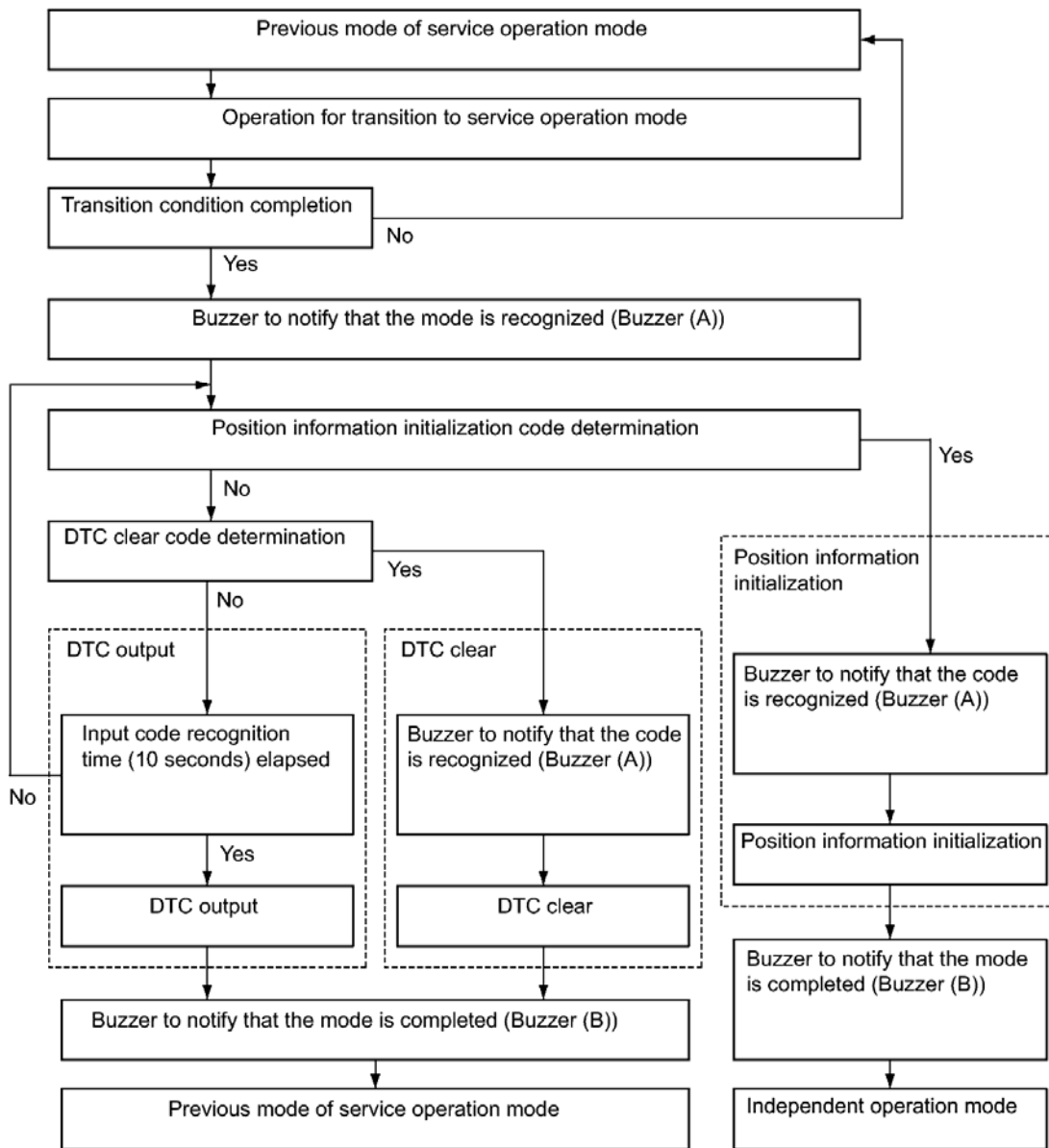


Fig. 29: Service Operation Mode Flowchart.

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- After entering service operation mode, regardless of the switch positions, service operation mode will run until completed.
- If only 1 code is entered, or if the code cannot be determined, diagnostic codes stored in RAM will be output.
- If unstable power source voltage is detected, the system will not enter service operation mode.

b. Operation to enter service operation mode.

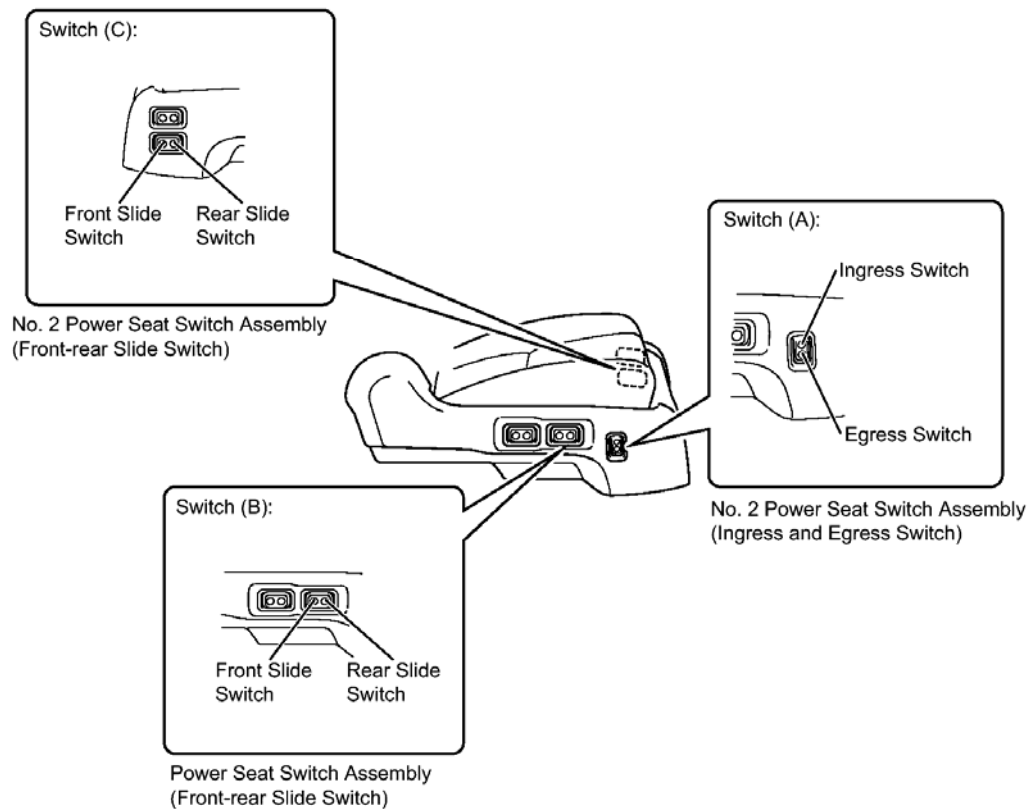


Fig. 30: Initializing Position Information
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Press and hold the ingress switch or egress switch of switch (A).
 2. With switch (A) depressed, press and hold the front slide switch or rear slide switch of switch (B) or (C) for 10 seconds to enter service operation mode, and confirm that buzzer (A) sounds.
- c. Conditions for ending service operation mode.
1. If any of the conditions below are met, service operation mode will end.

Condition
Diagnostic code output complete
Diagnostic code clear complete
Auto access seat position

information initialization complete

d. Conditions for cancelling service operation mode.

1. If the condition below is met, service operation mode will be cancelled.

Condition

Unstable power supply voltage detected
--

e. Diagnostic code output.

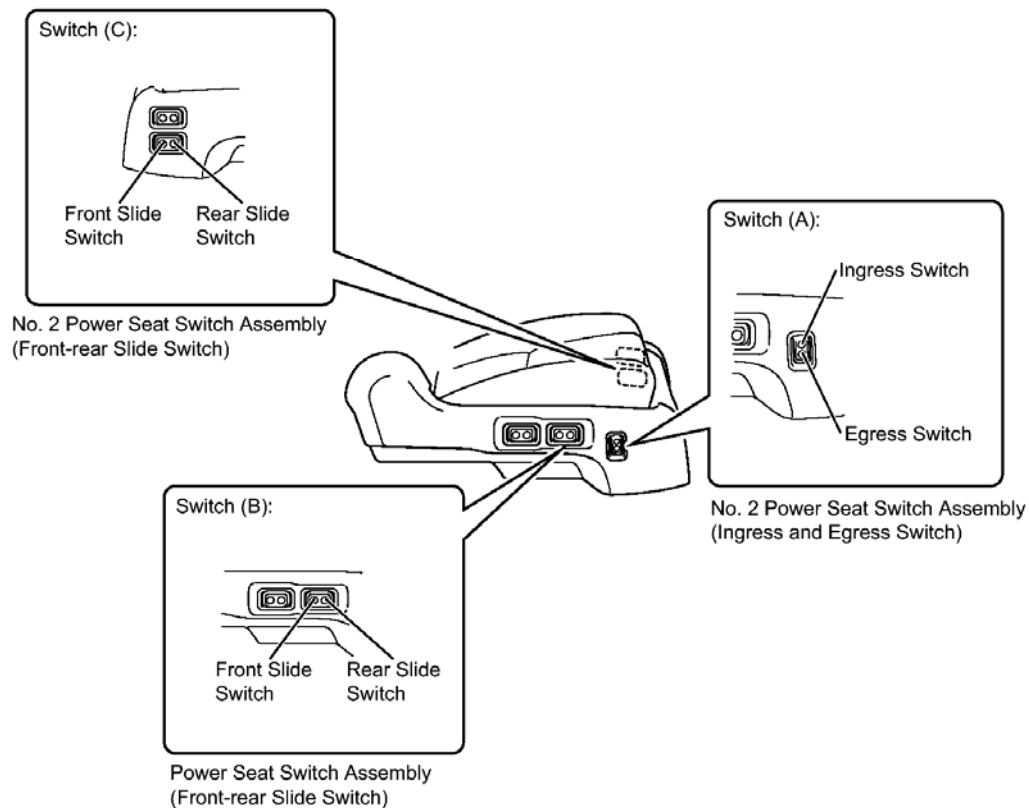
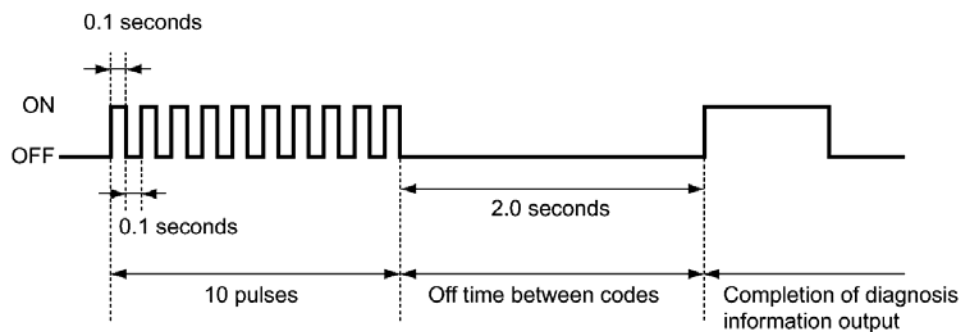


Fig. 31: Initializing Position Information
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Press and hold the ingress switch or egress switch of switch (A).
2. With switch (A) depressed, press and hold the front slide switch or rear slide switch of switch (B) or (C) for 10 seconds to enter service operation mode, and confirm that buzzer (A) sounds.
3. After buzzer (A) sounds, turn all operated switches to off.
4. 10 seconds after all operated switches are turned off, the diagnostic codes are output by sounding the buzzer (M).

Buzzer (M):

Normal Code:



Code 12 and 23:

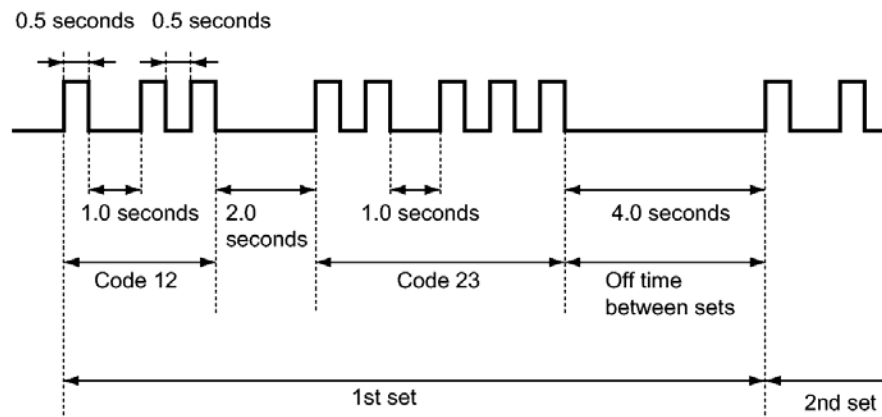


Fig. 32: Buzzer (M): Function Graph (w/ Normal Code And Code 12 & 23)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- If there is no diagnostic code (trouble code), the normal code (10 pulses) is output once.
- All diagnostic codes (trouble codes) are output as a set, which is repeated 3 times.

- Diagnostic codes are output in order starting with the lowest number, with a 2.0 second pause (buzzer off) between codes.
 - If diagnostic codes are stored, there is a 4.0 second pause (buzzer off) between sets.
5. After the diagnostic codes have been output the specified number of times, the service operation mode complete buzzer (B) sounds, and the system returns to the mode it was in before entering service operation mode.
- f. Clearing diagnostic codes.

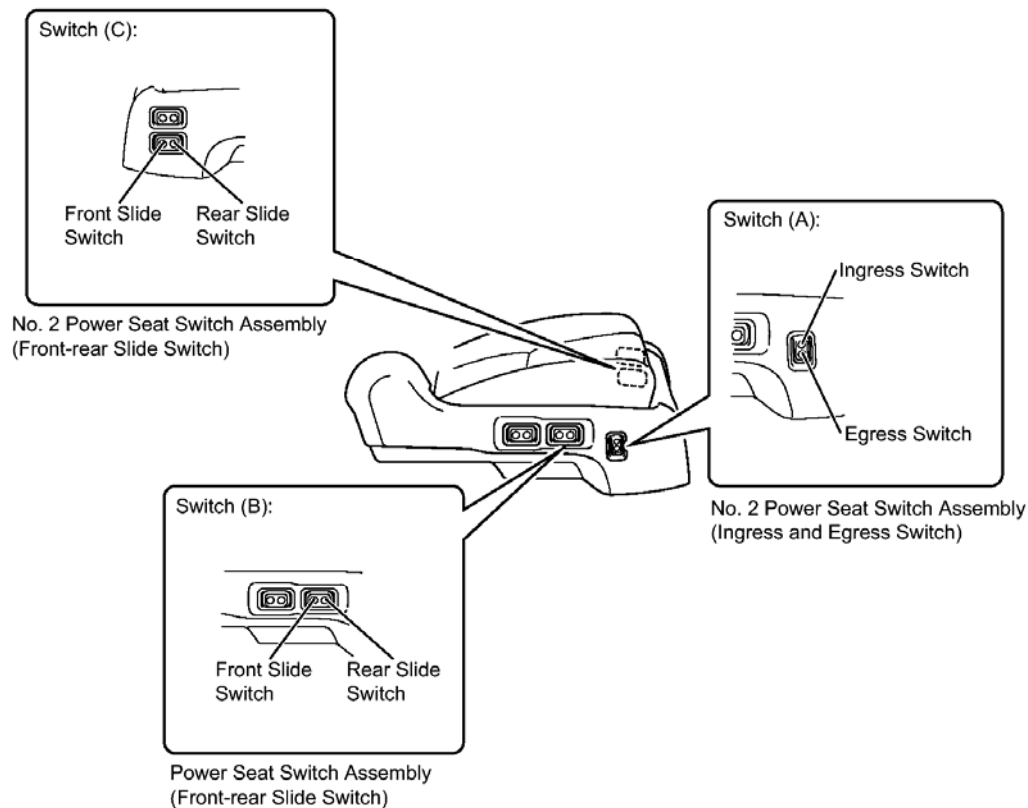


Fig. 33: Initializing Position Information
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Press and hold the ingress switch or egress switch of switch (A).
2. With switch (A) depressed, press and hold the front slide switch or rear slide switch of switch (B) or (C) for 10 seconds to enter service operation mode, and confirm that buzzer (A) sounds.
3. After buzzer (A) sounds, turn all operated switches off.
4. After turning all operated switches off, perform either Operation A or B below within 10 seconds.

Operation	Operation Switch
A	Ingress switch or egress switch of switch (A) ON 3 times --> front slide switch or rear slide switch of switch (B) or (C) ON 3 times
B	Front slide switch or rear slide switch of switch (B) or (C) ON 3 times --> ingress switch or egress switch of switch (A) ON 3 times

5. After the diagnostic codes have been cleared, the service operation mode complete buzzer (B) sounds, and the system returns to the mode it was in before entering service operation mode.
- g. Initializing auto access seat position information.

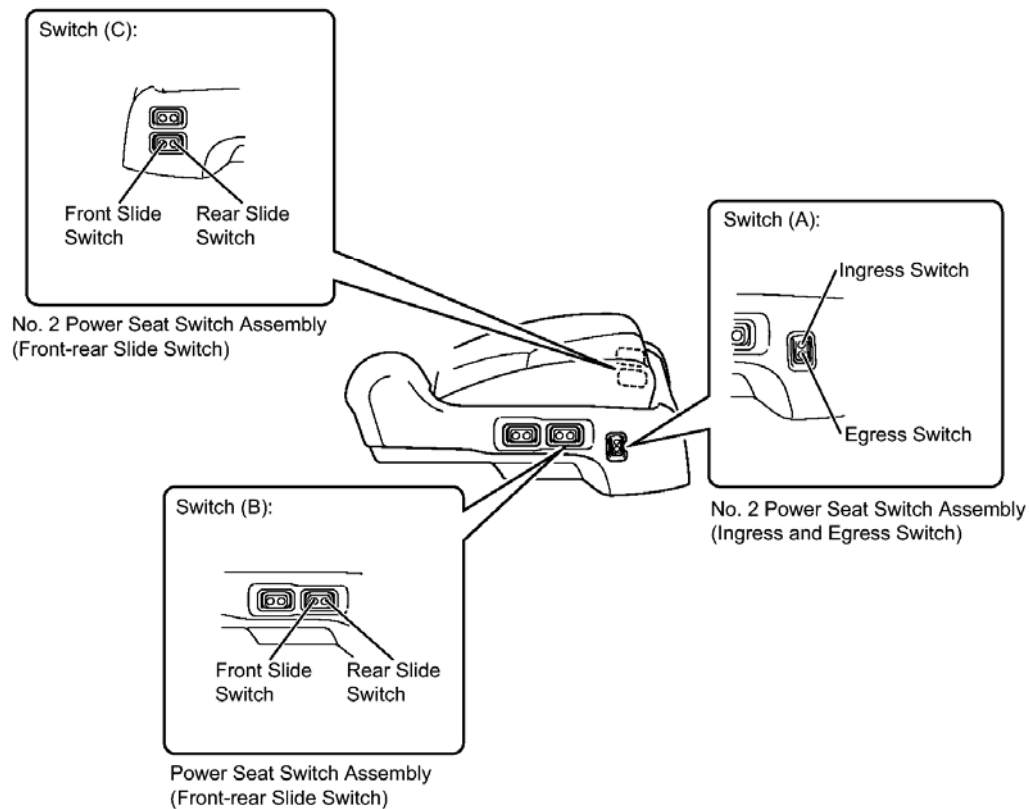


Fig. 34: Initializing Position Information
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Press and hold the ingress switch or egress switch of switch (A).
2. With switch (A) depressed, press and hold the front slide switch or rear slide switch of switch (B) or (C) for 10 seconds to enter service operation mode, and confirm that buzzer (A) sounds.
3. After buzzer (A) sounds, turn all operated switches off.
4. After turning all operated switches off, perform either Operation A or B below within 10 seconds.

Operation	Operation Switch
	Ingress switch or egress switch of switch (A) ON 4

A	times --> front slide switch or rear slide switch of switch (B) or (C) ON 4 times
B	Front slide switch or rear slide switch of switch (B) or (C) ON 4 times -- > ingress switch or egress switch of switch (A) ON 4 times

5. When position information has been initialized, buzzer (B) sounds.
6. After buzzer (B) sounds, the system enters independent operation mode.

2. INDEPENDENT OPERATION MODE

HINT:

- Buzzer pattern. Refer to **SYSTEM DESCRIPTION**.
- If the auto access seat position information stored in the EEPROM has been lost, independent operation mode enables calibration of all origin point information for the auto access seat and enables this information to be stored in the EEPROM.
- If any of the conditions below are met, the system will enter independent operation mode.

Condition
Auto access seat position information is initialized in service operation mode
Auto

access seat position information is discarded as a result of fail-safe operation

Position information for at least one motor is missing (the position of the auto access seat cannot be confirmed)

NOTE: **If the position information for even one motor is missing, it is necessary to record position information for all motors.**

- a. Conditions for ending independent operation mode.
 - 1. If the following condition is met, independent operation mode will end.

Condition
Calibration of all origin points for the auto access seat is completed

- b. Conditions for cancelling independent operation mode.
 - 1. If any of the conditions below are met, independent operation mode will be cancelled.

Condition
System enters service operation mode

Operation of all motors is prohibited by fail- safe operation

c. Changes to operation switch function

1. During independent operation mode, the functions of the following operation switches is changed or restricted. For switch operations other than those listed below, the buzzer (E) will sound and the system will not operate.

Operation Switch	Motor Affected	Operation
While holding down egress switch, front slide switch is pressed	Swivel motor	Swivel operation to egress side*1
While holding down egress switch, rear slide switch is pressed	Front-rear slide motor	Front slide operation*2
Egress switch is pressed	-	Does not operate
Ingress switch is pressed	Outward slide motor Up-down motor	Outward slide/up-down auto operation*3
Front slide switch is pressed	Swivel motor	Swivel operation to ingress side
Rear slide switch is pressed	Front-rear slide motor	Front-rear slide auto operation*4

Up switch is pressed	Reclining motor	Reclining up operation
Down switch is pressed	Reclining motor	Reclining down operation

HINT:

- *1: Only when swivel motor origin point position calibration is incomplete, egress operation to move back to the position from the start of independent operation mode is possible.
- *2: Operation is only possible when front-rear slide motor origin point position calibration is incomplete.
- *3: When either the upper end limit switch or the outward slide origin point limit switch is OFF, the following operations are performed in order of priority.

Priority	Outward Slide Origin Point Limit Switch	Upper End Limit Switch	Up-down Motor Position	Operation	
				Outward Slide	Up-down
1	OFF	OFF	Not determined	Stop	Up
2	OFF	ON	0 edges or more	Stop	Down
3	OFF	OFF	Below 172 edges	Stop	Down
4	OFF	OFF	172 edges or more	Ingress	Stop
5	ON	OFF	172 edges or more	Stop	Up
6	ON	ON	0 edges	Stop	Stop

- *4: When front-rear slide motor origin point position calibration is not complete, perform operation from Mode 4.

Mode	Operation Direction	Completion Conditions		Next Mode	Diagnostic Note
		Excessive Load (front limit or rear	Front-rear Slide Origin Point		

		limit detected)	Limit Switch		
0	Stop	X	-	-	When origin point position information calibration is complete
1	Stop	X	-	4	-
2	Front	X	ON -- > OFF	1	Limit switch ON at first transition
		Front limit	-		
3	Stop	X	-	2	-
4	Rear	X	OFF -- > ON	0	At initialization
		Rear limit	-	3	

d. Conditions for sounding buzzer.

1. If any of the following conditions are met, the buzzer sounds.

Condition	Buzzer
An origin point position calibration is completed	Buzzer (J)
All origin point position calibrations are completed	Buzzer (I)
Fail-safe	Depends on specific fail-safe mode. Refer to <u>FAIL- SAFE CHART</u>
Ignition switch is	Buzzer

ON but shift lever is not in P	(D)
Power slide door RH fully closed	Buzzer (G)
Seat belt is fastened	Buzzer (G)

3. OPERATING PROCEDURES FOR INDEPENDENT OPERATION MODE

HINT:

- Buzzer pattern. Refer to **SYSTEM DESCRIPTION**.
 - After any origin point position calibration, operation of all motors other than the reclining motor and up-down motor is stopped until independent operation mode ends.
 - After calibration of any origin point for the auto access seat, if there is a motor for which calibration is incomplete, the stop on that motor is released and calibration of the incomplete origin point can be performed again by operating the switch.
- a. Upper end and outward slide origin point calibration.
 1. Press and hold the ingress switch of the No. 2 power seat switch assembly (ingress and egress switch).
 2. Auto access seat moves in the following order: Up-down motor operates upward --> upper end limit switch ON detected, buzzer (J) sounds --> up-down motor operates downward --> up-down motor stops --> outward slide motor operates in the egress direction --> outward slide motor origin point limit switch ON detected --> outward slide motor stops --> up-down motor operates upward --> upper end limit switch ON detected, buzzer (J) sounds --> up-down motor stops.
 - b. Swivel origin point calibration.

NOTE: **Performing swivel origin point calibration from an egress state can cause the seat cushion to bump against the vehicle body, so slide the seat approximately 50 mm (2.0 in) rearward before performing calibration.**

1. Press and hold the front slide switch of the power seat switch assembly (front-rear slide switch) or No. 2 power seat switch assembly (front-rear slide switch).
 2. Auto access seat moves in the following order: Swivel motor moves in the ingress direction --> swivel origin point limit switch ON detected, buzzer (J) sounds --> swivel motor stops.
- c. Front-rear slide origin point calibration.
 1. Press and hold the rear slide switch of the power seat switch assembly (rear slide switch) or No. 2 power seat switch assembly (rear slide switch).
 2. Auto access seat moves in the following order: Rear slide operation --> front-rear slide limit

switch ON detected, buzzer (J) sounds --> front-rear slide motor stops.

d. Reclining origin point calibration.

HINT:

Until the reclining origin point calibration is completed, only reclining down operations can be performed when the reclining limit switch is ON, and only reclining up operations can be performed when the reclining limit switch is OFF.

1. Press and hold the down switch of the power seat switch assembly (reclining switch) or No. 2 power seat switch assembly (reclining switch).
2. Auto access seat moves in the following order: Reclining down operation --> reclining limit switch OFF detected --> reclining motor stops.
3. Press and hold the up switch of the power seat switch assembly (reclining switch) or No. 2 power seat switch assembly (reclining switch).
4. Auto access seat moves in the following order: Reclining up operation --> reclining limit switch ON detected, buzzer (J) sounds --> reclining motor stops.

e. Conditions for ending independent operation mode.

1. When calibration of all origin points for the auto access seat is completed, the buzzer (I) sounds and independent operation mode ends.

4. SYMPTOM-BASED MODE CHART

- a. The following chart shows what modes are applicable to specific malfunction symptoms.

Symptom	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode
No operations functional, buzzer does not sound	o	o	o	o
Seat continuously reverses direction due to excessive load detected (when no excessive load is applied to mechanism, this is due to the pulse signal not being generated)	o	o		
In independent operation				

mode, completed configuration of all origin points other than the reclining origin point			o	
• No right swivel operation • No left swivel operation	o		o	
• No front slide operation • No rear slide operation	o	o	o	
• No outward slide operation • No inward slide operation	o		o	
• No move down (lower) operation • No move up (raise) operation	o		o	
No reclining operation	o	o	o	
No unlock operation	o			
Seat moves in egress direction even when power	o		o	

slide door RH is not fully open.				
Seat operates even when shift position is not P.	o		o	
Seat moves in egress direction even with seat belt fastened	o		o	

FAIL-SAFE CHART

FAIL-SAFE CHART

1. AUTO ACCESS SEAT OPERATION IN FAIL-SAFE MODE

- a. If there is a malfunction in any motor or switch, auto access seat operation is prohibited.

1. Power Supply Unstable

Applicable Mode	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode
	o	o	o	o

Result of Fail-safe Operation	Detection Condition	Fail-safe Control Method	Fail-safe Deactivation Condition
System function suspended	Low voltage/high voltage detected - Voltage reduced - Power source disconnected - High voltage	- Motor output prohibited - DTC detection prohibited - Buzzer sounding prohibited	Voltage recovery conditions met and operation switch off detected

2. Motor Malfunction

Applicable Mode	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode	

	0	0	0		
Applicable Motor	Reclining Motor	Front-rear Slide Motor	Swivel Motor	Outward Slide Motor	Up-down Motor
	0	0	0	0	0
DTC	Reclining Motor Error	Front-rear Slide Motor Error	Swivel Motor Error	Outward Slide Motor Error	Up-down Motor Error
	11	12	13	14	15

Result of Fail-safe Operation	Detection Condition	Fail-safe Control Method	Fail-safe Deactivation Condition
Operation of all motors prohibited	For a stopped motor, 32 edges or more are detected in a 0.5 second period	Motor temporarily stopped + buzzer (C) sounds --> position information erased, change to independent operation mode --> operation of all motors prohibited, diagnostic code stored in RAM	Diagnostic code cleared in service operation mode or by power supply off

3. Pulse Not Generated

Applicable Mode	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode	
	0				
Applicable Motor	Reclining Motor	Front-rear Slide Motor	Swivel Motor	Outward Slide Motor	Up-down Motor
	0	0	0	0	0

Applicable Mode	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode	
		0			
Applicable Motor	Reclining Motor	Front-rear Slide Motor	Swivel Motor	Outward Slide Motor	Up-down Motor
		0			
DTC	Reclining Pulse Error	Front-rear Slide Pulse Error	Swivel Pulse Error	Outward Slide Pulse Error	Up-down Pulse Error
	21	22	23	24	25

Result of Fail-safe Operation	Detection Condition	Fail-safe Control Method	Fail-safe Deactivation Condition
System function suspended	When the applicable motor is operating and the mask time passes without even 1 edge being output, and this occurs 7 times	Operation halted, buzzer (C) sounds --> position information erased, change to independent operation mode	- Diagnostic code cleared in service operation mode or by power supply off - Origin point position information calibrated in independent operation mode

4. Limit Switch Malfunction

Applicable Mode		Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode	
		0				
		Reclining	Front-rear	Swivel	Outward Slide	Up-down Motor

Applicable Motor		Motor	Slide Motor	Motor	Motor	
	Stuck ON Malfunction	o	o	o	o	o
	Except Limit Switch Area	o		o	o	o
	Past Limit Switch Area		o			
	Within Mechanical Lock Area		o			
	Mechanical Lock Excessive Load Detected			o	o	o
Applicable Mode		Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode	
			o			
Applicable Motor		Reclining Motor	Front-rear Slide Motor	Swivel Motor	Outward Slide Motor	Up-down Motor
	Stuck ON Malfunction	o	o			
	Except Limit Switch Area	o				
	Limit Switch ON --> OFF Detected			o	o	o
	Past Limit Switch Area		o			
	Within Mechanical Lock Area		o			
		Reclining Pulse	Front-rear Slide	Swivel	Outward Slide	Up-down Pulse Error

DTC	Error	Pulse Error	Pulse Error	Pulse Error	
	41	42	43	44	

Result of Fail-safe Operation	Detection Condition	Fail-safe Control Method	Fail-safe Deactivation Condition
Egress prohibited Ingress allowed	Limit switch logic and pulse count do not match Limit switch logic judged to be abnormal	During Access Seat Mode: - Operation halted, buzzer (C) sounds --> egress prohibited, ingress allowed During Power Seat Mode: - Operation halted, buzzer (C) sounds --> egress prohibited, forced ingress operation allowed	- Diagnostic code cleared in service operation mode or by power supply off During Access Seat Mode: - Ingress completed During Power Seat Mode: - Forced ingress by No. 2 power seat switch (ingress switch)

5. Mechanical Lock Non-detection Malfunction

Applicable Mode	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode	
	o				
Applicable Motor	Reclining Motor	Front-rear Slide Motor	Swivel Motor	Outward Slide Motor	Up-down Motor
			o		
	Mechanical Lock Undetection Error				

Result of Fail-safe Operation	Detection Condition	Fail-safe Control Method	Fail-safe Deactivation Condition
System function suspended	While swivel motor is operating in the egress direction, the swivel motor position passes the end of the mechanical lock (+ margin-of-error pulse) but mechanical lock excessive load is not detected	Operation halted + buzzer (C) sounds --> position information erased, change to independent operation mode	- Diagnostic code cleared in service operation mode or by power supply off - Origin point position information calibrated in independent operation mode

6. Pulse Out-of-sync

Applicable Mode	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode	
	o				
Applicable Motor	Reclining Motor	Front-rear Slide Motor	Swivel Motor	Outward Slide Motor	Up-down Motor
		o	o	o	
DTC	Pulse Differential				
	31				

Result of Fail-safe Operation	Detection Condition	Fail-safe Control Method	Fail-safe Deactivation Condition
	When the		

System function suspended	basic pulse out-of-sync for two applicable motors is 160 edges or more for 0.2 continuous seconds In 0.2 continuous seconds, 202 edges or more are detected even once	Operation halted, buzzer (C) sounds --> position information erased, change to independent operation mode	- Diagnostic code cleared in service operation mode or by power supply off - Origin point position information calibrated in independent operation mode
	When the basic pulse out-of-sync for two applicable motors is 160 edges or more for 0.2 continuous seconds	Operation halted, buzzer (H) sounds --> pressing the operated switch again will not cause the buzzer to sound	- All operated switches detected as off - Basic pulse out-of-sync detected as less than 160 edges

7. Multiple Operation Switches Pressed

Applicable Mode	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode
	o	o	o	
Operated Switches	All operated switches (including seat control transmitter)			

Result of Fail-safe Operation	Detection Condition	Fail-safe Control Method	Fail-safe Deactivation Condition
	During Access Seat Mode:		

System function suspended	• Detection that 2 or more operation switches are pressed at the same time	During Power Seat Mode: • Detection that 2 or more operation switches are pressed at the same time During Independent Operation Mode: • Detection that 2 or more operation switches without a combined function after function change are pressed at the same	During Operation: • Operation halted --> no effect when operation switch pressed again During Operation Halt: • Operation halt continues --> no effect when switch pressed again Detection that all operation switches are off
---------------------------	--	---	---

	time • Detection that a third operation switch with combined function after change is ON		
--	--	--	--

8. Operating Conditions Not Met 1

Applicable Mode	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode
	0		0	
Applicable Signal	Shift P Signal			

Result of Fail-safe Operation	Detection Condition	Fail-safe Control Method	Fail-safe Deactivation Condition
Egress prohibited	During IG ON, shift	During Operation: • Operation halted + buzzer (D) sounds --> egress prohibited, ingress prohibited --> no effect when switch pressed again (buzzer (D) continues to sound)	• Ignition switch off • Shift P signal ON

Ingress prohibited	P signal off detected	During Operation Halt: Buzzer (D) sounds --> egress prohibited, ingress prohibited --> no effect when switch pressed again (buzzer (D) continues to sound)	detected Change to power seat mode
--------------------	-----------------------	--	--

9. Operating Conditions Not Met 2

Applicable Mode	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode
	o		o	
Applicable Signal	Power Slide Door RH Fully Open Signal			

Result of Fail-safe Operation	Detection Condition	Fail-safe Control Method	Fail-safe Deactivation Condition
		During Access Seat Mode (during operation): Operation halted + buzzer (G) sounds --> ingress allowed + buzzer (D)	

Operation halted	Power slide door RH fully open signal off detected	sounds --> egress prohibited + buzzer (G) sounds	
		During Access Seat Mode (when stopped):	
		Buzzer (G) sounds --> ingress allowed + buzzer (D) sounds, egress prohibited + buzzer (G) sounds	- Power slide door RH fully open signal ON detected - Change to power seat mode
		During Independent Operation Mode:	
		Buzzer (G) sounds --> no restrictions, buzzer does not sound if operation switch pressed again	

10. Operating Conditions Not Met 3

Applicable Mode	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode
	o		o	
Applicable Signal	Buckle Switch Signal			

Result of Fail-safe Operation	Detection Condition	Fail-safe Control Method	Fail-safe Deactivation Condition
		During Access Seat Mode (during operation): • Operation halted + buzzer (G) sounds --> ingress allowed, egress prohibited + buzzer (G) sounds	
Operation halted	Seat belt fastened	During Access Seat Mode (when stopped): • Buzzer (G) sounds --> ingress allowed, egress prohibited + buzzer (G) sounds	Detection that seat belt is unfastened
		During Independent Operation Mode: • Buzzer (G) sounds --> no restrictions, buzzer does not sound if operation switch	

		pressed again.	
--	--	----------------	--

11. Pulse Sensor Short

Applicable Mode	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode
	0	0	0	0

Result of Fail-safe Operation	Detection Condition	Fail-safe Control Method	Fail-safe Deactivation Condition
Operation halted	Voltage drop (6.5 V or lower) detected	- Motor output prohibited - DTC output prohibited - Sounding of buzzer prohibited	- Conditions for voltage recovery met and operated switches detected as off - Power supply reconnected and all operated switches detected as off

12. Buckle Failure

Applicable Mode	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode
	0	0	0	
Applicable Signal	Buckle Switch Signal			
DTC	Buckle Failure			
	81			

Result of Fail-safe Operation	Detection Condition	Fail-safe Deactivation Condition
	Cannot	

Operation halted	confirm that seat belt is fastened or unfastened for 1.0 seconds or more	Confirmation of seat belt fastened/unfastened status
------------------	--	--

13. Motor Continuously Energized

Applicable Mode	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode	
	o	o	o		
Applicable Motor	Reclining Motor	Front-rear Slide Motor	Swivel Motor	Outward Slide Motor	Up-down Motor
	o	o	o	o	o

Result of Fail-safe Operation	Detection Condition	Fail-safe Control Method	Fail-safe Deactivation Condition
Operation halted	Applicable motor is continuously energized for 60 seconds or more	Operation halted --> all operation switches detected as off --> wait for operation switch input	All operation switches detected as off

14. Outside of Area Error

Applicable Mode	Access Seat Mode	Power Seat Mode	Independent Operation Mode	Service Operation Mode	
	o	o	o		
Applicable	Reclining Motor	Front-rear Slide	Swivel Motor	Outward Slide	Up-down

Motor		Motor		Motor	Motor
	o	o	o	o	o

Result of Fail-safe Operation	Detection Condition	Fail-safe Control Method	Fail-safe Deactivation Condition
Operation halted	Applicable motor goes beyond the mechanical lock area	Operation halted + buzzer (C) sounds --> position information erased, change to independent operation mode	Position information initialized in independent operation mode

DIAGNOSTIC TROUBLE CODE CHART

DIAGNOSTIC TROUBLE CODE CHART

DTC Code	Detection Item	Suspected Part	See
11	Reclining Motor Malfunction	- Rear seat with adjuster frame assembly LH (reclining motor) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 11: Reclining Motor Malfunction</u>
12	Front-rear Slide Motor Malfunction	- Power seat motor assembly (front-rear slide motor) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 12: Front-rear Slide Motor Malfunction</u>
13	Swivel Motor Malfunction	- Power seat motor assembly (swivel motor) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 13: Swivel Motor Malfunction</u>
14	Outward Slide Motor Malfunction	- Power seat motor assembly (outward slide motor) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 14: Outward Slide Motor Malfunction</u>

15	Up-down Motor Malfunction	- A/A SEAT fuse - Power lift motor relay (raise relay) - Power lift motor relay (lower relay) - Access seat cylinder assembly (up-down motor) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 15: Up-down Motor Malfunction</u>
21	Reclining Pulse Abnormal	- Rear seat with adjuster frame assembly LH (reclining motor) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 21: Reclining Pulse Abnormal</u>
22	Front-rear Slide Pulse Abnormal	- Power seat motor assembly (front-rear slide motor) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 22: Front-rear Slide Pulse Abnormal</u>
23	Swivel Pulse Abnormal	- Power seat motor assembly (swivel motor) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 23: Swivel Pulse Abnormal</u>
24	Outward Slide Pulse Abnormal	- Power seat motor assembly (outward slide motor) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 24: Outward Slide Pulse Abnormal</u>
25	Up-down Pulse Abnormal	- A/A SEAT fuse - Power lift motor relay (raise relay) - Power lift motor relay (lower relay) - Access seat cylinder assembly (up-down motor) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 25: Up-down Pulse Abnormal</u>
31	Pulse Out of Sync	Position control ECU assembly	Refer to <u>DTC 31: Pulse Out of Sync</u>

41	Reclining Origin Point Limit Switch Malfunction	- Limit switch assembly (reclining origin point switch) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 41: Reclining Origin Point Limit Switch Malfunction</u>
42	Front-rear Slide Origin Point Limit Switch Malfunction	- Limit switch assembly (front-rear slide origin point switch) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 42: Front-rear Slide Origin Point Limit Switch Malfunction</u>
43	Swivel Origin Point Limit Switch Malfunction	- Limit switch assembly (swivel origin point switch) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 43: Swivel Origin Point Limit Switch Malfunction</u>
44	Outward Slide Origin Point Limit Switch Malfunction	- Limit switch assembly (outward slide origin point switch) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 44: Outward Slide Origin Point Limit Switch Malfunction</u>
45	Upper End Limit Switch Malfunction	- Limit switch assembly (upper end switch) - Harness or connector - Position control ECU assembly	Refer to <u>DTC 45: Upper End Limit Switch Malfunction</u>
73	Mechanical Lock Not Detected Error	Seat turn lock plate sub-assembly	Refer to <u>DTC 73: Mechanical Lock Not Detected Error</u>
81	Buckle Failure	- Rear seat 3 point type belt assembly RH - Harness or connector - Position control ECU assembly	Refer to <u>DTC 81: Buckle Failure</u>